STATEMENT D2v
OPERATING MANUAL

ANTHEM®

SONIC FRONTIERS
INTERNATIONAL

BREAKING THE SOUND BARRIER™

SAFETY PRECAUTIONS

READ THIS SECTION CAREFULLY BEFORE PROCEEDING!

⚡	**WARNING** RISK OF ELECTRIC SHOCK DO NOT OPEN	⚠

WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

⚡ The lightning flash with arrowpoint within an equilateral triangle warns of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

⚠ The exclamation point within an equilateral triangle warns users of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS PRODUCT.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE THE FUSE ONLY WITH THE SAME AMPERAGE AND VOLTAGE TYPE. REFER REPLACEMENT TO QUALIFIED SERVICE PERSONNEL.

WARNING: UNIT MAY BECOME HOT. ALWAYS PROVIDE ADEQUATE VENTILATION TO ALLOW FOR COOLING. DO NOT PLACE NEAR A HEAT SOURCE, OR IN SPACES THAT CAN RESTRICT VENTILATION.

IMPORTANT SAFETY INSTRUCTIONS

1. **Read Instructions** – All the safety and operating instructions should be read before the product is operated.

2. **Retain Instructions** – The safety and operating instructions should be retained for future reference.

3. **Heed Warnings** – All warnings on the product and in the operating instructions should be adhered to.

4. **Follow Instructions** – All operating and use instructions should be followed.

5. **Cleaning** – Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp, soft cloth for cleaning.

6. **Water and Moisture** – Do not use this product near water – for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.

7. **Accessories** – Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

8. **Ventilation** – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

9. **Power Sources** – This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

10. **Grounding and Polarization** – This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

11. **Power-cord Protection** – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

12. **Outdoor Antenna Grounding** – If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to the proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Antenna Lead-In Wire

Ground Clamp

Antenna-Discharge Unit
(NEC Section 810-20)

Grounding Conductors
(NEC Section 810-21)

Electrical Service
Equipment

Ground Clamps

Power Service Grounding
Electronic System
(NEC ART 250. Part H)

NEC-National Electrical Code

S2898A
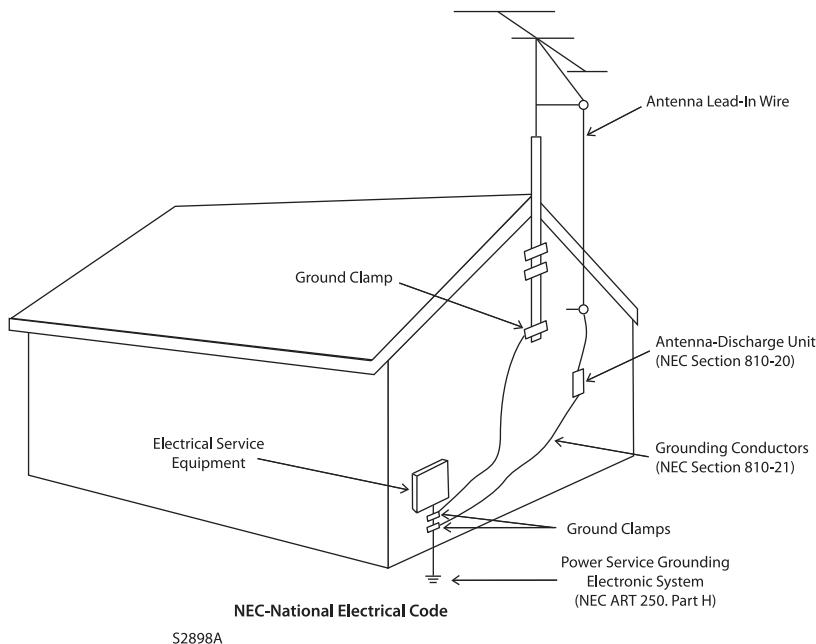
13. **Lightning** – For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable systems. This will prevent damage to the product due to lightning and power-line surges.

14. **Power Lines** – An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

15. **Overloading** – Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

16. **Object and Liquid Entry** – Never push objects of any kind through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Do not expose this product to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the product.

17. **Servicing** – Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

18. **Damage Requiring Service** – Unplug this product from the wall outlet and refer servicing to qualified personnel under the following conditions:

    • When power-supply cord or plug is damaged.

    • If liquid has been spilled, or objects have fallen into the product.

    • If the product has been exposed to rain or water.

    • If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will require extensive work by a qualified technician to restore the product to its normal operation.

    • If the product has been dropped or damaged in any way.

    • If the product exhibits a distinct change in performance – this indicates a need for service.

19. **Replacement Parts** – When replacement parts are required, be sure the technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

20. **Safety Check** – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

21. **Heat** – The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

RECYCLING AND REUSE GUIDELINES (Europe)
In accordance with the European Union WEEE (Waste Electrical and Electronic Equipment) directive effective August 13, 2005, we would like to notify you that this product may contain regulated materials which, upon disposal, require special reuse and recycling processing. For this reason Paradigm Electronics Inc. (the manufacturer of Paradigm speakers and Anthem electronic products) has arranged with its distributors in European Union member nations to collect and recycle this product at no cost to you. To find your local distributor please contact the dealer from whom you purchased this product or go to our website at www.paradigm.com.

Please note that only the product falls under the WEEE directive. When disposing of packaging and other shipping material we encourage you to recycle through the normal channels.

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■ **6. SOFTWARE UPDATING**

1. INTRODUCTION

Thank you for purchasing the Anthem Statement D2v processor.

The Statement D2v is a cutting-edge home theater audio processor with HDMI switching and video upconversion, multizone capabilities, and FM/AM tuner, along with state of the art video processing which includes deinterlacing, scaling, aspect ratio control, and picture adjustment. Anthem products are engineered to recreate the passion of live performance and thrill of the best movie theaters by using the highest level of circuit design, proprietary software, superior build quality, innovative features, and intuitive ergonomics with tremendous flexibility.

1.1   BEFORE MAKING CONNECTIONS

Check that you have received everything listed below and report discrepancies to your dealer as soon as possible. In case they are needed one day, keep the packing materials and the invoice that you received from your authorized Anthem dealer at time of purchase – without it, service will not be provided under warranty.

Packing List:

- Statement D2v
- 2 Remote controls
- 4 AA batteries
- FM antenna
- FM antenna adapter
- AM loop antenna
- IR terminal block (on rear panel)
- Power cord (North America only)

Additional items with ARC-1 Anthem Room Correction:

- Software installation CD
- Serial extension cable
- Microphone and clip
- USB microphone cable
- Telescopic stand
- Base

Safety Instructions:

- Read all precautions and instructions at the beginning of this manual.
- Do not connect power if there are signs of damage to any part of the exterior.
- The front panel power buttons and the rear panel AC switch do not disconnect the product from the AC line. Ensure that the power cord remains readily accessible at all times.
- To connect power, only use the supplied double-insulated power cord.
- Allow adequate ventilation to ensure reliable operation and to prevent overheating. The amount of space required above the unit for radiation depends on ambient air temperature and circulation. Installation inside an unventilated space such as a cabinet with a front that can be closed or a closet is not recommended.
- Failing to comply with any safety instruction, precaution, or warning in this operating manual is in violation of the intended use of the product.
- Anthem and any related party assume no liability for the user's failure to comply with requirements.

1.2   IN-USE NOTICES

- Disconnect the power cord before connecting or disconnecting any components.
- If the processor was transported or stored in the cold, let it warm to room temperature before use.
- Do not remove the top cover.
- Do not modify the product.
- Due to continuing advances operational characteristics may change. If this manual contains discrepancies please check www.anthemAV.com for the latest manual or software.

1.3   FRONT PANEL

1 – Path selection

2 – Mode and decoder indicators

3 – Display

4 – FM•AM preset selection

5 – FM•AM tuning / setup menu navigation

6 – Master Control Knob:
- Volume
- Tune for FM•AM
- Settings adjustment
- Setup for time and source naming

7 – Speaker group and headphone access

8 – Power on / standby

9 – Mute

10 – Status review / setup menu access

11 – Balance setting

12 – Bass / treble settings

13 – LED and display brightness setting / video adjustment menu access

14 – Front panel IR sensor

15 – Surround mode / Dynamics / THX options / shortcuts to most common video adjustments

16 – Headphone jack

17 – Source selection

For a larger diagram see inside back cover.

1.4   FRONT PANEL DISPLAY

MAIN Display Example:

```
DVD1    DolbyHD 1080p
5.1+PLIIx Movie -7.5
```
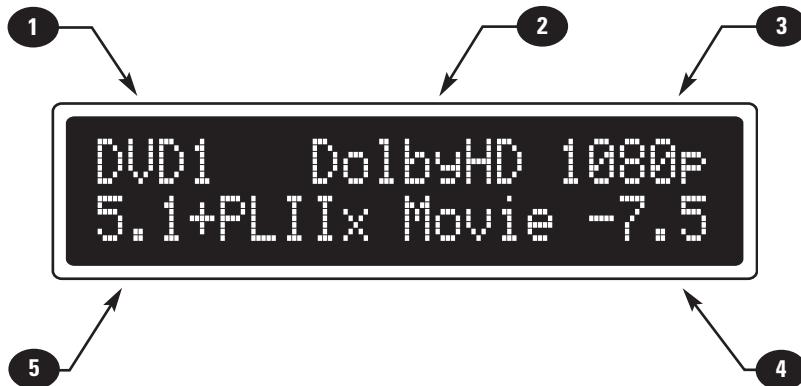
1 – Source selection.

2 – Audio input format or sleep timer if engaged.

3 – Video **input** resolution.

4 – Volume.

5 – Number of input channels + surround mode.

FM•AM Display Example:

```
FM2-5 St Sk>    480i
101.3 MHz  -18.5 dB
```
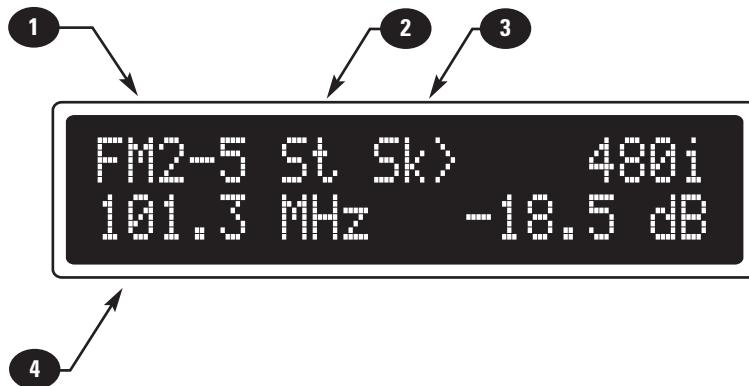
1 – Band+bank+preset. The tuner has three FM banks (FM1, FM2, and FM3) and one AM bank.

2 – FM mode. Displays "St" when in stereo, "HB" when in Hi-Blend, or "Mn" when in mono.

3 – Seek and scan indications.

4 – Frequency. FM is tuned to the nearest 0.1 MHz. AM is tuned to nearest 10 kHz (120V model) or 9 kHz (230V model).

The above information is also shown on-screen. For the video outputs that produce it, see section 3.

1. INTRODUCTION continued …

1.5 REAR PANEL
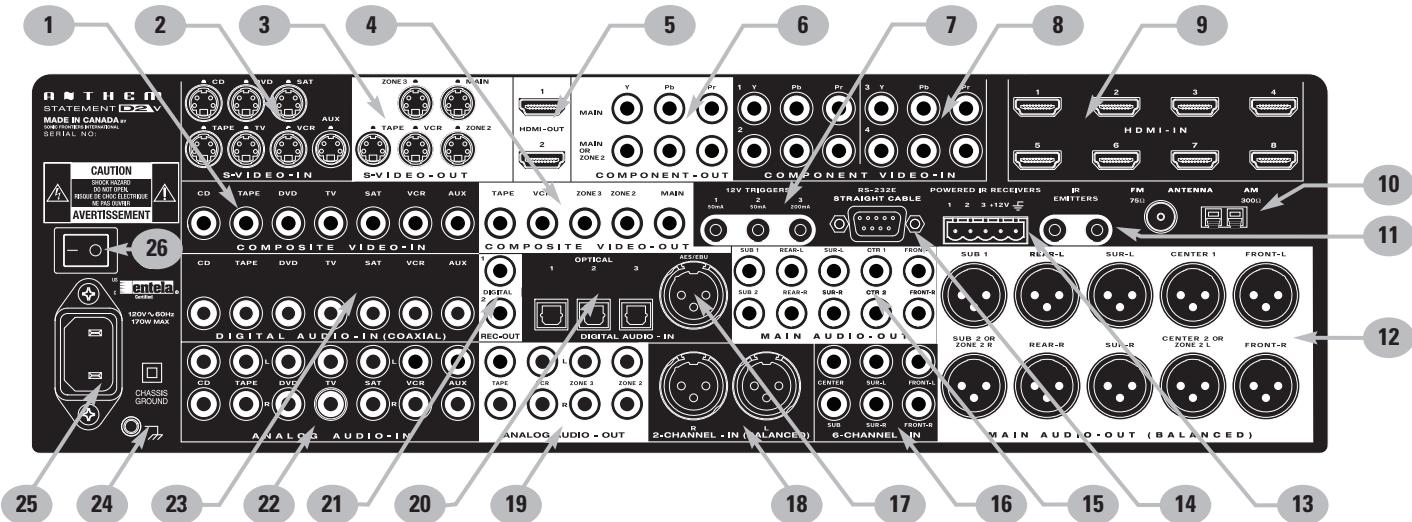
1 – 7 composite video inputs	**14** – RS-232 interface (bidirectional)
2 – 7 S-Video inputs	**15** – Main audio output (10 jacks)
3 – 5 S-Video outputs	**16** – 6-channel analog audio input
4 – 5 composite video outputs	**17** – AES/EBU digital audio input
5 – 2 HDMI outputs (parallel)	**18** – Analog audio balanced L/R input
6 – 2 component video outputs (3 jacks/ea)	**19** – ZONE2, ZONE3, and REC analog audio outputs
7 – 3 12V trigger outputs	**20** – 3 optical digital audio inputs
8 – 4 component video inputs (3 jacks/ea)	**21** – 2 digital audio REC outputs
9 – 8 HDMI inputs	**22** – 7 analog audio L/R inputs
10 – FM and AM antenna connections	**23** – 7 digital audio coaxial inputs
11 – 2 IR emitters	**24** – Ground terminal
12 – Main audio output (10 balanced jacks)	**25** – Power cord connection
13 – 3 IR extension inputs with 12V supply	**26** – AC switch

For a larger diagram see inside back cover.

4

1.6   REMOTE CONTROL

1 – Learn – for customization of remote
2 – Power On and Power Off
3 – Control mode. **These are not source selection keys (see #17).**
4 – • Copy MAIN when ZONE2, ZONE3, or RECORD is selected.
        • LIST for PVRs.
5 – Previous / next source seek
6 – Bass / treble selection for adjustment
7 – RECORD path selection (must be in MAIN control mode)
8 – Balance
9 – Navigation:
        • Setup menu (press and hold Menu for 3 seconds)
        • Back (for setup)
        • Status (press Select)
        • FM•AM direct entry (press and hold Select for 3 seconds)
   ⬍ • FM•AM tuning
        • Adjustment for surround mode, dynamics, THX,
          levels, bass, treble, timers, brightness, and lip-sync
   ◆ • FM•AM seek
        • Adjustment for balance and lip-sync
10 – THX selection
11 – FM•AM preset up/down
12 – Sleep timer selection / timers setting
13 – Volume up/down and mute
14 – Channel selection for level, bass, treble, and balance
15 – Numeric pad and shortcuts:
        • 1-6: FM•AM preset
        • 7: Video processing menu (press and hold for 3 seconds)
        • 8: Front panel brightness setting
        • 8: Lip-sync selection (press and hold for 3 seconds)
        • 9: Tone Bypass
        • 0: Dynamics selection
        • 0: Video input adjustments (press and hold for 3 seconds)
16 – • Surround mode selection
        • Video selections (press and hold for 3 seconds)
17 – Next source
18 – Source selection

Front:
Infrared transmitter and receiver.

Bottom:
Battery cover. When battery voltage is low the control mode key will blink
5 times after a key is pressed.

1.7   SPEAKER PLACEMENT

These illustrations show typical speaker placement for a 7.1-channel surround system. The surround and rear speakers are normally positioned 2-3 feet above ear level. The subwoofer can be placed in any location where severe resonances are prevented – see section 3.3.

5 and 6 are not used in a 5.1 system

1. Front-Left	3. Front-Right	5. Rear-Right	7. Surround-Left
2. Center	4. Surround-Right	6. Rear-Left	8. Subwoofer (".1")

slightly behind listening position
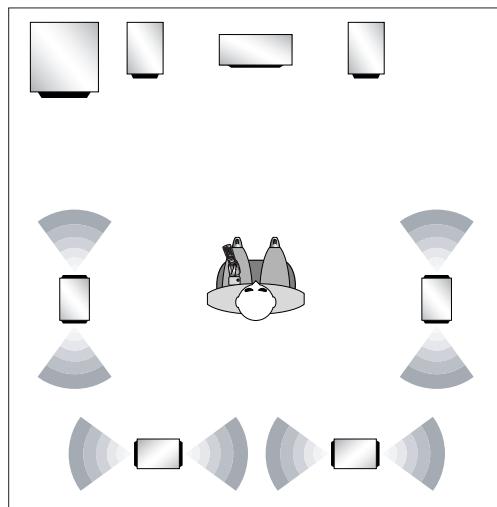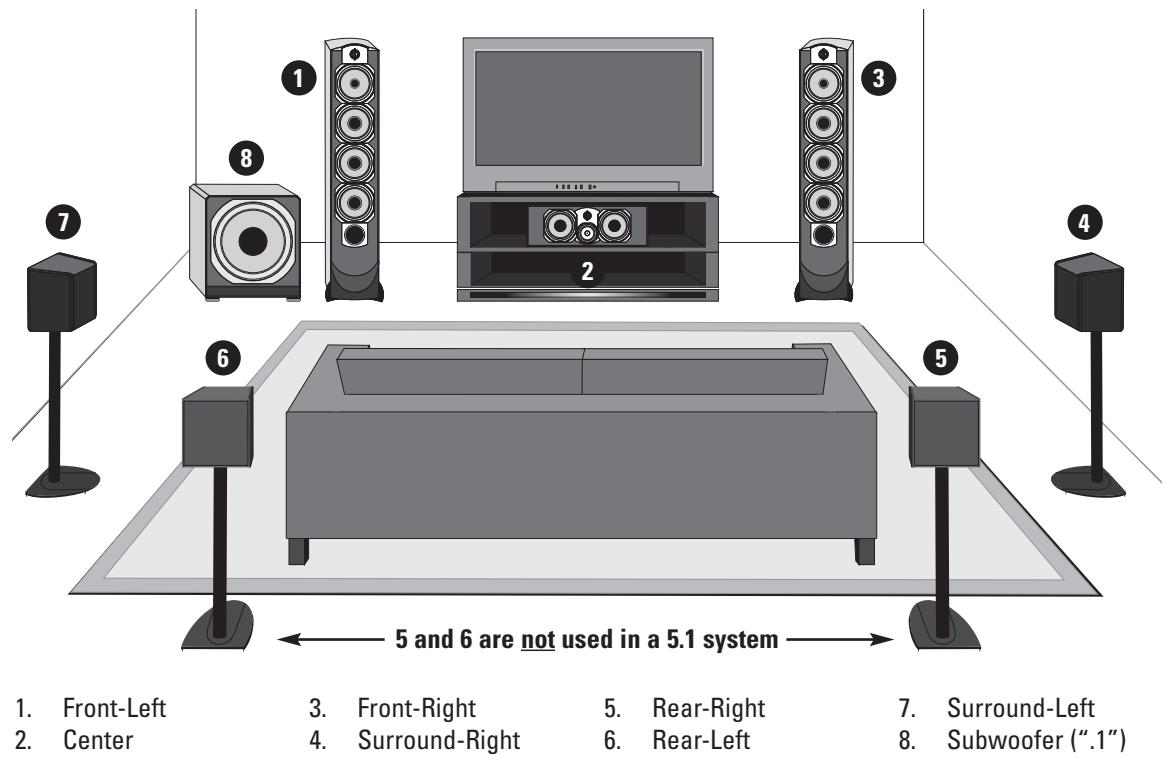
Dipole surrounds
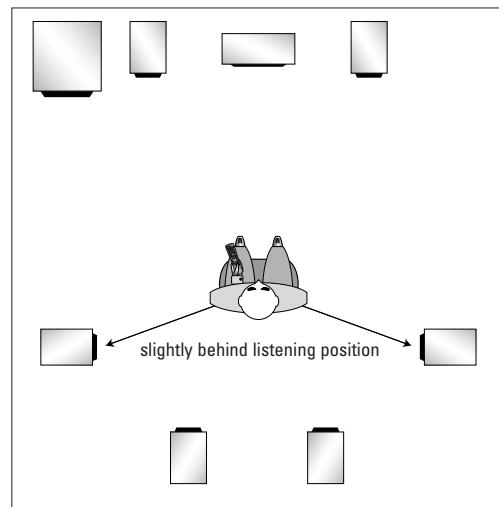
Direct radiating surrounds

1.8   INTERCONNECTS

These illustrations show audio, video, IR, and trigger connectors used between source components, the processor, displays, and power amplifiers. RCA coaxial cables with 75-ohm impedance are equally suitable for analog video and digital audio.

RCA Black or White	RCA Red	RCA Yellow	HDMI	Mini DIN
Analog Left Channel	Analog Right Channel	Digital Audio or Composite Video		
RCA Green: Component Y	RCA Blue: Component Pb	RCA Red: Component Pr	Digital Video and Audio	S-Video

1/4" Stereo	3.5mm Mini (Mono)	Optical	XLR Female (connects to output)	XLR Male (connects to input)
Headphone	12V Trigger IR Emitter	Digital Audio	Analog Balanced or AES/EBU	

Read before calling for technical support due to bad, intermittent, or no picture via HDMI!
1080p uses twice the bandwidth that 720p and 1080i do – make sure that the cable is suitable for the application otherwise the picture may contain pixel dropouts or not play at all.

Use HDMI Category 2 cables, also known as "v1.3 certified". This is a requirement for all connecting devices including extenders when connecting a display that supports Deep Color (10- or 12-bit). Connecting devices that worked in an older setup may not work with Deep Color. If the source allows Deep Color to be turned off, start troubleshooting by turning it off.

12-bit Deep Color that works at 1080p24 may not work at 1080p50 or 1080p60.

BE CAREFUL WHEN MAKING HDMI CONNECTIONS. The connector should easily slide in the jack – do not insert it on an angle and do not force it. Each connector contains 19 delicate pins and damaged pins can damage jacks. Such damaged jacks are not covered by warranty. If your HDMI cables have been connected enough times that they are about to wear out, we recommend that you replace them.

If using DVI connection note that cables with DVI connection on one end and HDMI connection on the other are more reliable than DVI-HDMI adapters. If you are having a connection problem and an adapter is in use, start troubleshooting by eliminating the adapter.

2. CONNECTIONS

2.1   VIDEO CONNECTIONS

To configure inputs **see section 3.6** and to configure video outputs **see section 3.1.**

HDMI:

Video is sent with audio from source components to the processor. Maximum video resolution is 1080p60. Connect MAIN HDMI output to a display with HDMI or DVI input – one with High-bandwidth Digital Content Protection (HDCP) is required to display copy-protected material. DVD players usually enable HDCP <u>even on home movies</u>. **If the source is protected, only HDMI video output is active** (see section 4.14).
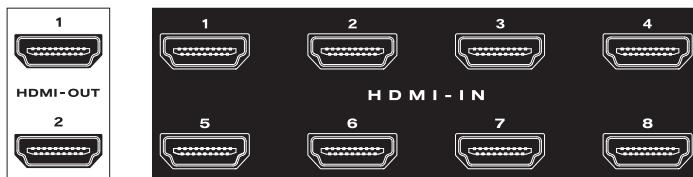
HDMI switching requires at least two seconds **per stage**, i.e. at least four seconds from source to processor to display.

Component Video:

Component video uses three coaxial cables and has a maximum resolution of 1080p when unprocessed or 480p when the source is copy-protected with Macrovision. Maximum input resolution is 1080i60 if the input is processed or converted to HDMI. The second Component output can be used in MAIN, processed or unprocessed, or in ZONE2.
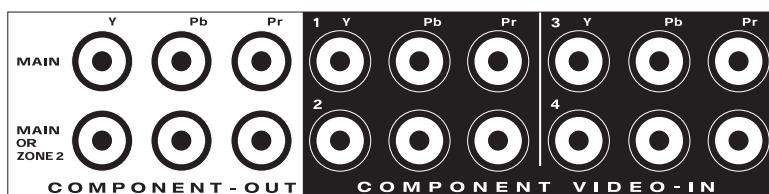
S-Video:

Maximum resolution is 480i (NTSC) / 576i (PAL). This connection keeps brightness and color separate for a better picture than Composite. S-Video input can be converted to Component and HDMI output (MAIN only).
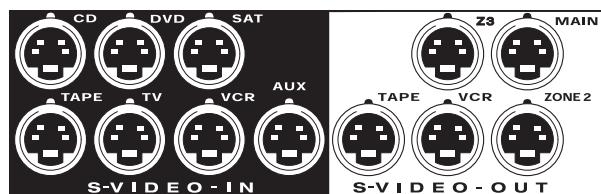
Composite Video:

Maximum resolution is 480i (NTSC) / 576i (PAL). This traditional format combines the black/white and color information for transmission on a single coaxial cable. To be displayed, the information has to be separated, a process that degrades video quality. Composite inputs can not be converted or processed. If you use a VCR, one with S-Video output is recommended. If a composite video source is black and white, it can be plugged into a Component video's **Y** input. If there is no choice but to convert a color source's composite output, a composite to S-Video <u>converter</u> is needed (<u>not</u> an adapter turned backwards).

2.2   AUDIO CONNECTIONS

Digital Audio Inputs and Outputs:
Digital audio source components can be connected with a coaxial, optical, balanced, or HDMI cable. These carry 2-channel PCM, Dolby Digital, and DTS. The HDMI inputs also accept up to eight channels of PCM.

Should you need audio from the HDMI output to your display, it's 2-channel PCM.
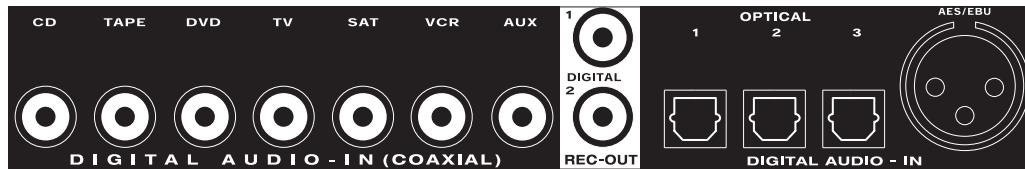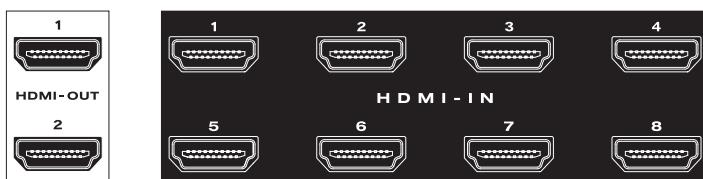
Use the HDMI inputs if your display has HDCP-compliant HDMI or DVI input, otherwise use the coaxial or optical inputs. The processor also provides one balanced AES/EBU connection, which is used on professional equipment. Any digital input can be assigned to any number of sources that are set to digital. **To change digital audio connection from factory default, see section 3.6.**

Digital Rec-Out can provide a signal to the digital audio input of a Mini Disc recorder, CD recorder etc. from any source set to Digital (except HDMI) or Anlg-DSP – see sections 3.6 to 3.9.

Analog Audio Inputs:
Analog audio connections are made with RCA or XLR cables. To use ZONE2, ZONE3, or RECORD, connect digital <u>and</u> analog audio and video* from the source. ZONE2, ZONE3, and RECORD require analog connection unless set to copy MAIN (explained in sections 3.6 and 4.3).
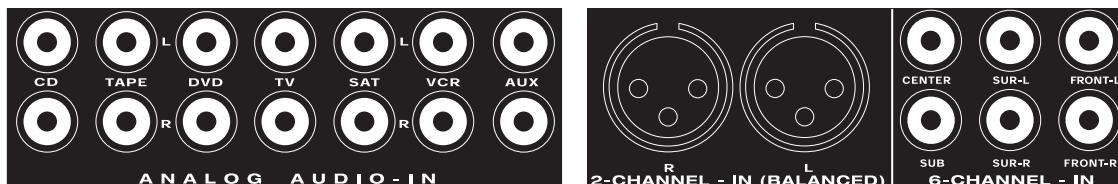
6-Ch Analog Input:
The 6-Ch input is for connecting DVD-Audio and multichannel SACD players that do not have HDMI output. When 6-Ch is selected, the video signal from **DVD** input is routed to the video outputs by factory default – to change this, see section 3.6.

HDMI connection with cable and satellite receivers may be problematic especially when output resolution follows each channel (native or pass-through mode). If there is a problem with HDMI from cable or satellite use component video connection instead, with coax or optical connection for audio. As these connections were designed to carry HDTV formats, there is almost never a difference in picture and sound quality with proper settings. As well, switching between channels is faster.

*Some boxes disable their component video output once HDMI is connected. To use the box in a secondary zone that uses component video, connect the box to the processor via component, not HDMI.

Analog Audio Outputs:

Balanced connection offers the highest transmission quality over long cable lengths, because it rejects noise pickup. In the processor, XLR output voltage is twice that of RCA (6 dB higher). The RCA outputs and the XLR outputs are always active – both can be used at the same time if the system requires it.

Parallel outputs are provided for a second center channel speaker and/or subwoofer. If your screen is large, you might want to use one center channel speaker above it and another one below it. One way to tame room resonances is by using multiple subwoofers playing the same signal from different locations in the room.

If you are not using the second set of balanced SUB2 and CENTER2 outputs, they can be reassigned as ZONE2 L/R outputs to ensure noise rejection if the ZONE2 amplifier has balanced input and it's at a distance from the processor (see section 3.9).

If you're using one rear channel, use the Rear-L output to connect it (see section 3.3).
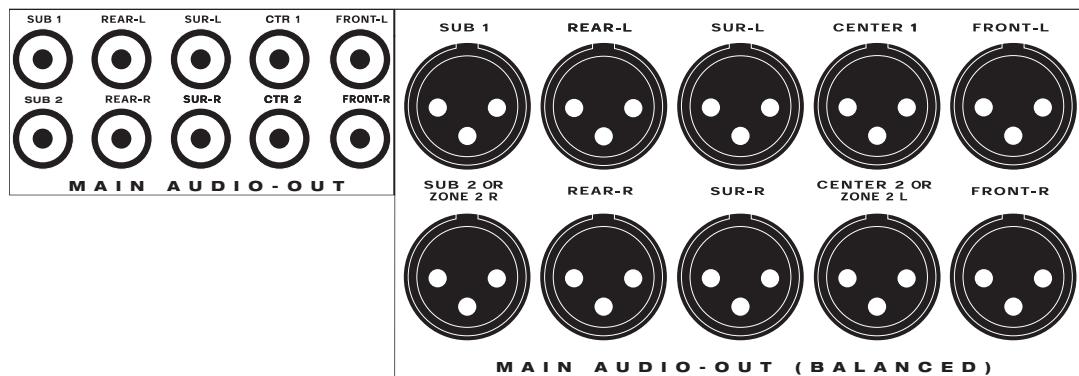
Shown below are the analog audio RECORD outputs which connect to the audio inputs of recording devices, together with the outputs that connect to amplifiers for ZONE2 and ZONE3:
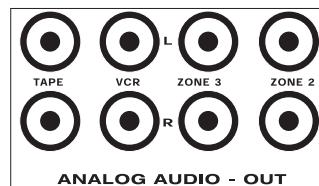
Why am I not getting sound in ZONE2, ZONE3, or RECORD?
For ZONE2, ZONE3, and RECORD to have any output, the source components being used there must be connected to the processor with the same type of connection. For example, if a source is connected via HDMI, there won't be output in ZONE2 unless you make additional connections from the source to the processor – analog L/R for audio, and Component, S-Video, or Composite video – whichever type the display in ZONE2 uses.

The exception is when using Copy mode for audio – see section 4.3.

2.3 FM•AM ANTENNAS

To connect the AM loop antenna, press the spring-loaded tabs of the AM ANTENNA connector and insert the bare ends of the two wires. Move the antenna until best reception is found.

To connect the FM antenna, connect the two wires to the screw terminals of the 75-ohm to 300-ohm adapter, then connect the adapter to the FM ANTENNA connector. Move the antenna until best reception is found – this is usually a "T" formation. If your cable company provides FM service, you can connect the cable to the processor.

75-ohm to 300-ohm adapter
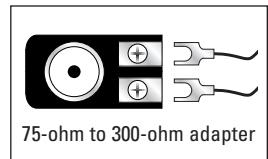
2.4 12 VOLT TRIGGERS

If your other components have provisions for a trigger, you can have them turn on and off together with the processor, or when a specified source is selected. Connect a trigger output from the processor to the trigger input of your power amplifier, display, etc., using a cable with 3.5mm mono mini plugs.
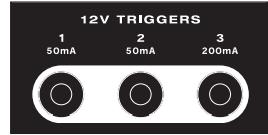
The processor provides flexible trigger options. From the factory, all the triggers are disabled. Through the setup menu, you can specify the conditions for enabling triggers (see section 3.11).

2.5 POWERED IR (INFRA RED) RECEIVERS

External IR receivers allow the remote control to be used from other locations in your home. Once an IR receiver is wired to another room, connect it to one of the three IR RECEIVER inputs through the removable terminal block. To use the terminal block, remove it from the processor, loosen the proper screw, insert the wire in the slot, tighten the screw onto the wire, and insert the terminal block into the processor. See section 3.11 for Setup information.
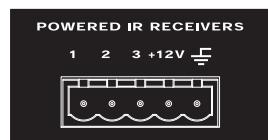
In addition, there is no need for an external 12V supply to power the receivers – use the processor's built-in supply instead for up to three IR receivers and connect according to the IR receiver manufacturer's instructions.
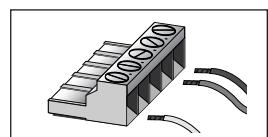
Custom Installers: The processor's IR inputs sense modulated 38 kHz carrier, not demodulated data. With some control systems, an emitter face-to-face with an IR receiver may be needed.

2.6 IR (INFRA RED) EMITTERS

IR emitters allow control of your source components from any location in your home that has an IR receiver connected to the processor. After positioning the IR emitter according to its instructions, connect it to IR EMITTER output. Commands through the rear IR RECEIVER are re-transmitted through the IR emitters.

2.7 POWER

Connect the power cord to the processor and the power source then turn on the rear panel AC switch.

Example 1:   Disc Player to processor to main display

HDMI IN

Connect if
using
ZONE2/3 or
REC

Connect if using
digital REC-OUT or
if source's video
output is DVI

Connect if
using ZONE2

Connect for
MAIN

L
R
AUDIO
OUT

COAX
OUT

YPbPr OUT
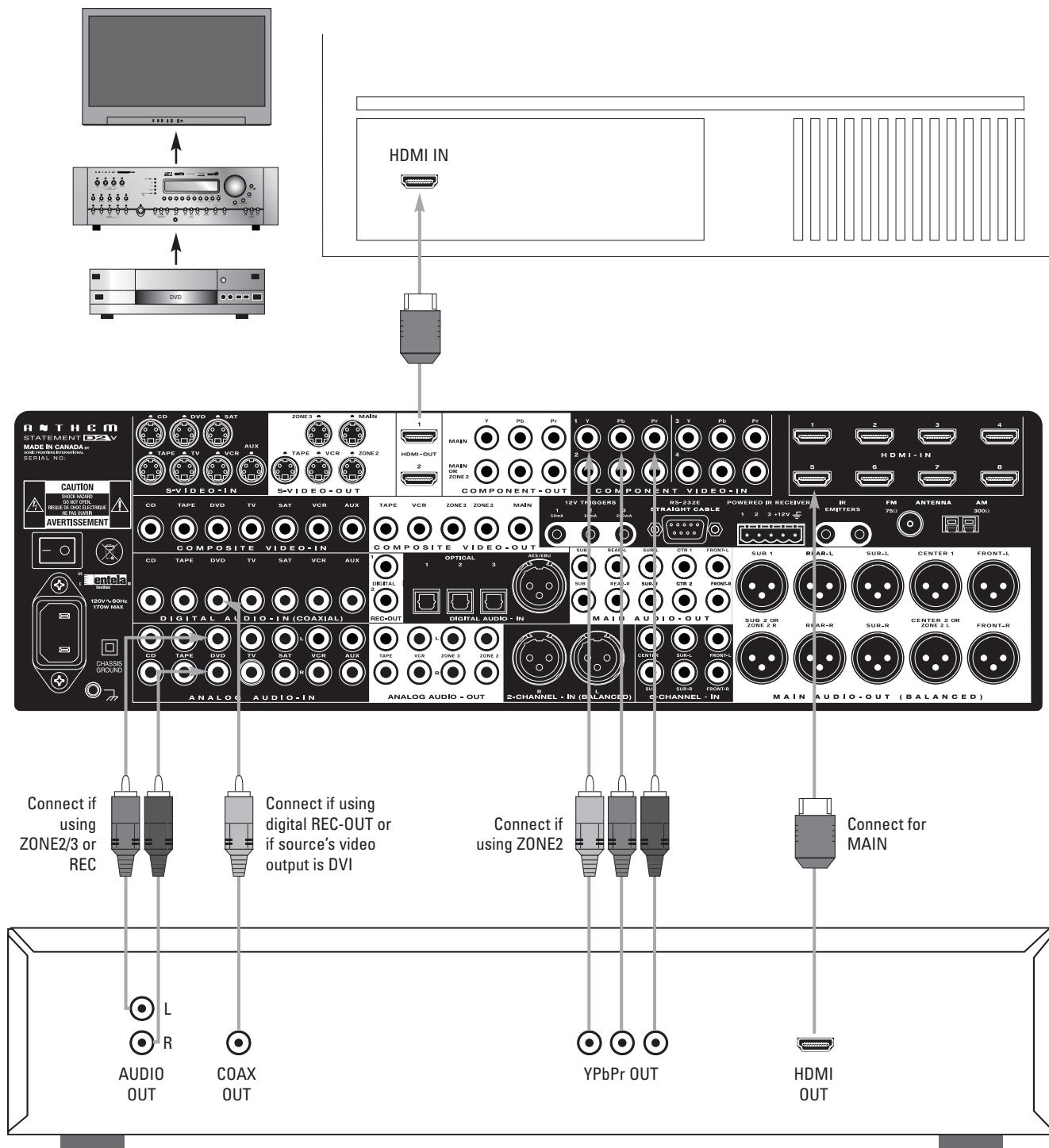
HDMI
OUT

Cable and satellite receivers: HDTV receivers can be connected as above although **HDMI connection may be problematic** with older models especially when output resolution changes between SD, 720p, and 1080i according to the channel. If HDMI is problematic use component video connection instead, with coaxial or optical connection for audio.

In any case, using coax/optical for audio results in faster audio switching when video resolution changes.

Example 2: A/V Recorder to processor
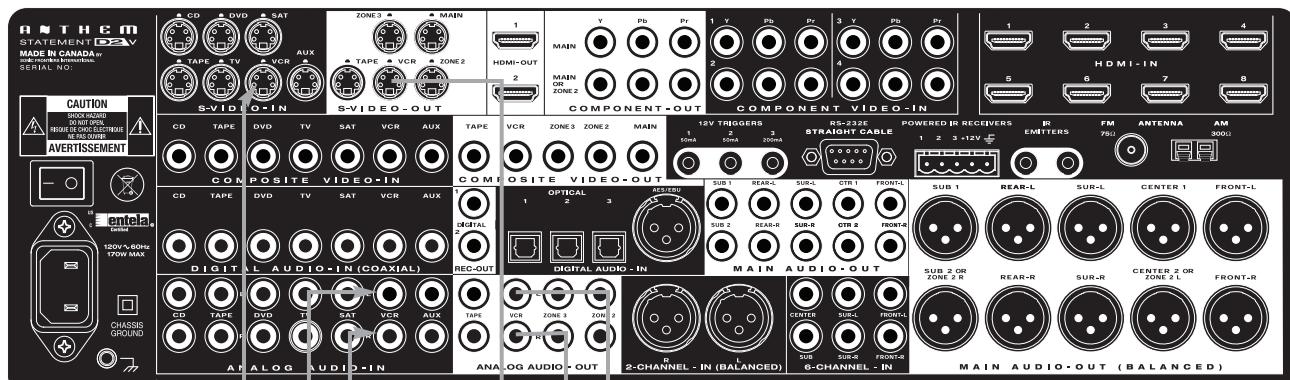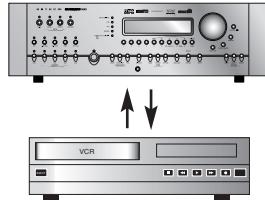
For ZONE2, ZONE3, and REC, in most cases you must use the same input type as the output type. If MAIN uses a different input connection, all you need to do is add these connections for ZONE2, ZONE3, and REC.

VIDEO OUT

AUDIO OUT
L
R

VIDEO IN

AUDIO IN
L
R
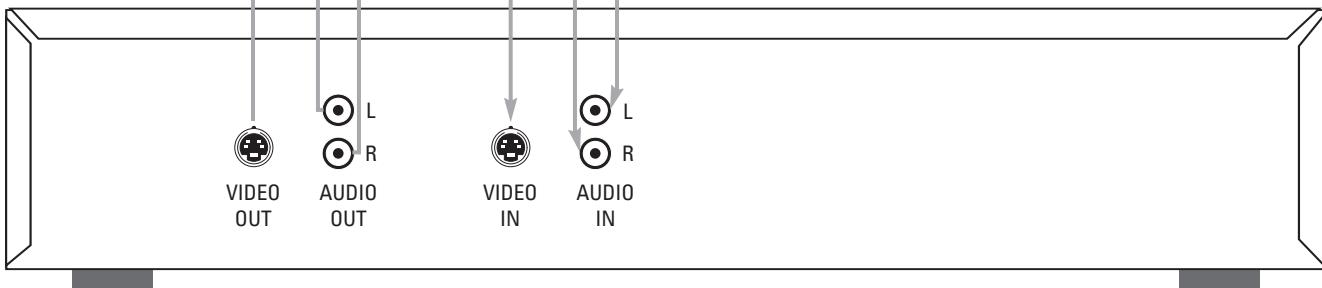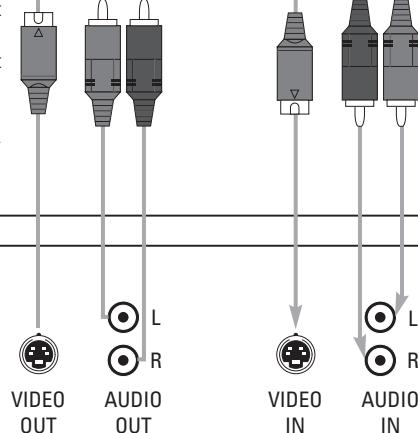
2. CONNECTIONS continued …

Example 3: Processor to amplifiers and subwoofer (Balanced connection shown, single-ended is similar)

Trigger Setup Suggestion:
If it is not necessary to have both amplifiers turned on when stereo sources are playing, set triggers to turn on only the 2-channel amplifier when a stereo source is selected (see section 3.11).

To powered subwoofer

14
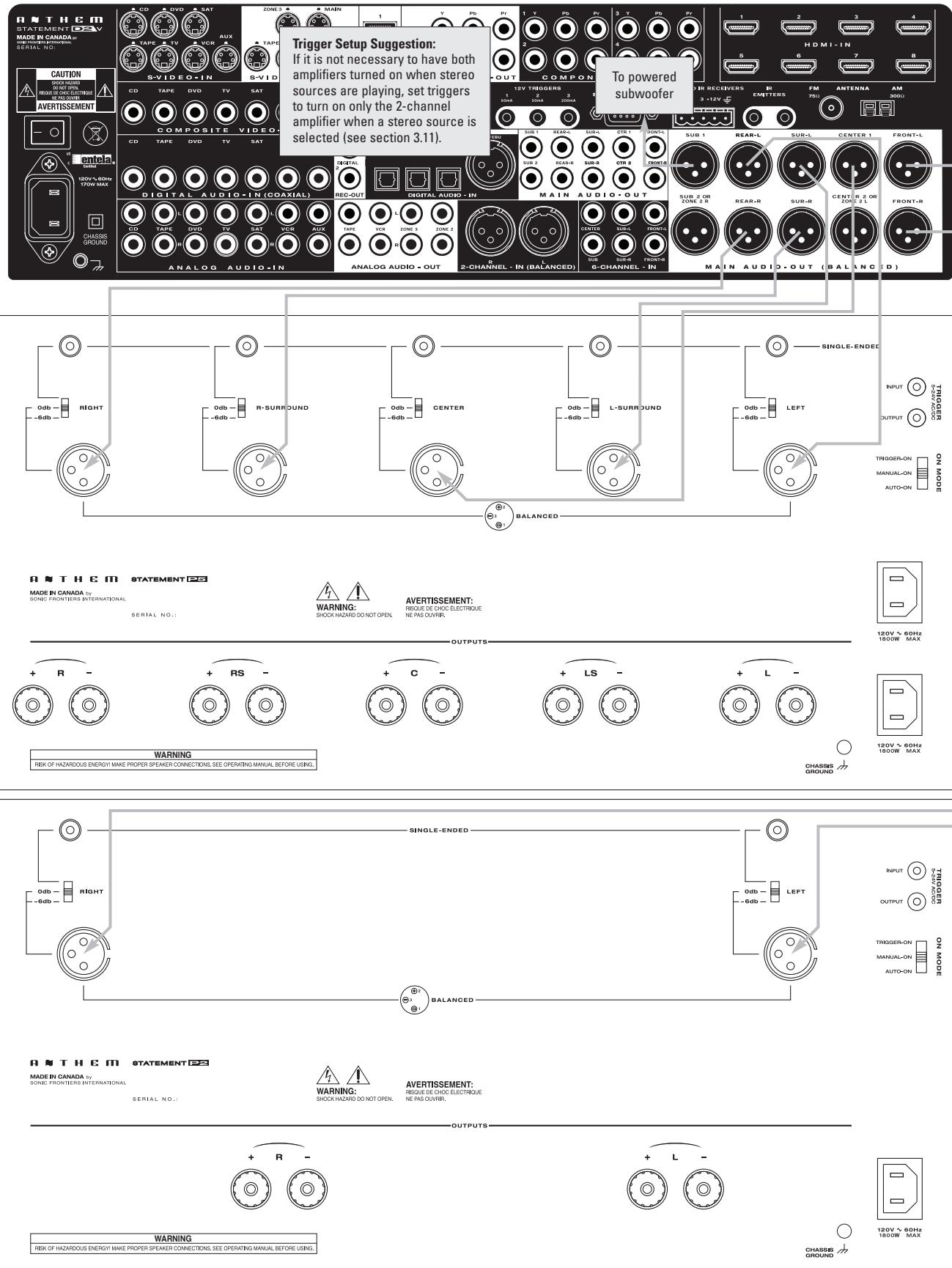
3. SETUP

For optimum performance and enjoyment, your processor should be properly set up. This may appear like a lot of work but keep in mind that most settings do not need to be changed from the factory ones.

The most important things are entering information about your display and speakers if the defaults do not apply, the distance from each speaker to the listening area, balancing output levels to one another, and input connections. The rest is preference – the surround mode presets, for example, should be set up **after** you have played various sources and have decided which surround modes you like best.

For proper audio balance, menus involving test noises must be set up in the order that they appear.

Alternatively, most of the setup can be done on your personal computer through RS-232 connection and a program from our web site, called Setup Editor. This can also save your configuration as a backup file. Setup Editor cannot play test signals – calibration still has to be done through the setup menu.

HOW TO ENTER THE SETUP MENU

The setup menu can be accessed from **MAIN** and **ZONE2**. The on-screen display shows only in that path. Test noises play only from MAIN.

Remote Control
Make sure the appropriate control mode is set then press **MENU** or **SUB/LFE** for 3 seconds.

Front Panel
Make sure the appropriate path is selected then press and hold **STATUS (Setup)** for 3 seconds.
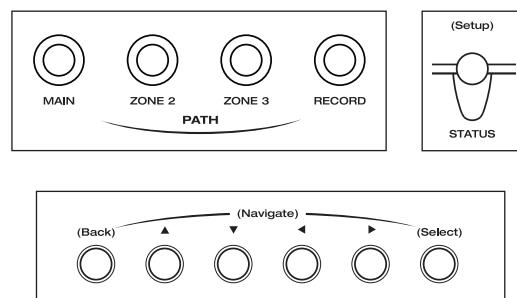
HOW TO NAVIGATE IN THE SETUP MENU

- Use the ▲ ▼ buttons to scroll through menus.
- Press **SELECT** to choose a menu item.
- Use the ▲ ▼ and ◄ ► buttons to change settings.
- Press **BACK** to return to previous item or menu.

HOW TO EXIT FROM THE SETUP MENU

Press **BACK** as many times as necessary. Each time BACK is pressed the previous item or menu returns. The menu will exit if not used for 5 minutes to prevent a burned-in on-screen image.

SETTING UP THE PROCESSOR

Upon entering the setup menu your display will show the menu below. Only 8 menu items can be displayed at once – for clarity this manual shows each menu with all its items. On-screen display is recommended although the front panel shows similar information, one item at a time. If the default video output settings do not work with your display, use the front panel display to set video output. Setup menus are displayed through MAIN HDMI and Component (processed) outputs, and MAIN and ZONE2 S-Video outputs, whereas the 2-line status display and the video processing menu are displayed as follows:

MAIN on-screen display is available via HDMI1 output by default. On-screen display comes from HDMI2 and Component (processed) if "Preferred" is changed to "Component" in menu 1 submenus. S-Video on-screen display is available in both cases.

ZONE2 on-screen display is available via S-Video output.

```
            STATEMENT D2v SETUP
          1. VIDEO OUTPUT
          2. SET TIME / TIMERS
          3. SPEAKER CONFIG
          4. LISTENER POSITION
          5. LEVEL CALIBRATION
          6. SOURCE SETUP
          7. MODE PRESETS
          8. ANALOG INPUT LEVELS
          9. ADC / AUDIO OUTPUT
         10. VOLUMES / PATH NAMES
         11. TRIGGER / IR / RS232
         12. DISPLAYS / TIMEOUT
         13. SAVE / LOAD SETTINGS
         14. LOCKOUT / PASSWORDS
         SELECT Enters Submenu
```

To go to a submenu, highlight a menu item and press **SELECT**. Each on-screen menu also has a scrolling help line at the bottom as shown above.

3.1   VIDEO OUTPUT

Highlighting VIDEO OUTPUT then pressing **SELECT** displays this menu:

```
        1.    VIDEO OUTPUT
        a. VIDEO OUT CONFIG 1
        b. VIDEO OUT CONFIG 2
        c. VIDEO OUT CONFIG 3
        d. VIDEO OUT CONFIG 4
```

Video Output Configurations:
The Statement D2v allows you to set four video output configurations – only **Configuration 1** is needed in most cases. The rest can be used to match the output refresh rate to source refresh rates, i.e. 1080p24, 1080p50, and 1080p60 <u>if</u> your display accepts these rates, or with a secondary display that needs different settings – only one display can be used at a time in this case. Output assignment by source is explained in section 3.6, and on-the-fly selection is explained at the end of section 4.11.

> **Calibration professionals:** Live Video Settings Editor, a program downloadable from our web site, allows control via computer and file creation for video processing described in section 4.11, plus gamma correction (single or separate RGB curves) and custom output resolution and timing.

Once entering Configurations 2 through 4, the menu asks whether or not you want to use the same settings as Configuration 1 – the factory default is Yes. If different settings are used, the output changes according to the line that's highlighted in the VIDEO OUTPUT menu. Highlighting VIDEO OUT CONFIG 1 in the VIDEO OUTPUT menu then pressing **SELECT** displays this menu:

```
1a.  VIDEO OUT CONFIG 1
a. S-VIDEO OSD: NTSC
b.   PREFERRED: HDMI
c. RESL'N: 1280x720p60
d. COLOR SPACE: Auto
e.     DATA: Auto
f.LETTERBOX: Black
g.       SYNC: Normal
h.COMPNT2 OUT: Passthru
```

Items a. through g. pertain to MAIN output only.

Changes in this menu do not take place immediately to prevent loss of video output as you scroll through settings. Once you leave this menu, it asks for confirmation – use the ◂ ▸ buttons to change to Yes, then press **SELECT**. To put a change into effect before leaving the menu, press **SELECT** then confirm.

> **If using both HDMI outputs** and a conflict results when attempting to use two displays at the same time, ensure that "automation" features that displays sometimes use to determine which of their HDMI inputs have a signal are disabled. The input selection must remain on the one connected to the processor.
>
> When two displays are connected and powered on, the EDID (handshake info) from the one connected to HDMI1 is used in regard to Auto selections in the menu above, even if it results in output that the display connected to HDMI2 does not support.

How should I set my video sources to get the most out of video processing?
Where possible disable video processing in your sources so the Statement D2v's advanced processing can be used to its potential.

For standard DVD, set the player's output to 480i/576i because if output is progressive you will be looking at the player's deinterlacing, not the Statement D2v's. If the player does not allow 480i/576i HDMI output, using 480i/576i component video output may be best. If the player can be set to put out both 480i (NTSC) and 576i (PAL) according to source, you can use that setting – the Statement D2v accepts both formats.

If your HD cable/satellite receiver has passthrough mode where output resolution follows each station's resolution, use it. If not, set the receiver's output according to the HD channels that you watch most.

HD material on disc is natively 1080p24 or 1080i60 – if your player has a passthrough mode where output resolution and refresh rate follow that of the source, you can use it with Configuration 1 resolution set to, for example, 1920x1080p60 and Configuration 2 set to 1920x1080p24.

If your sources do not allow native (passthrough) video output, consider purchasing ones that do.

How should I set my display to get the most out of video processing?
If your display allows, set it to 1:1 pixel or dot-for-dot mode. The display's stretch modes, including edge cropping or overscan, should not be used if avoidable since they rescale the image unnecessarily.

S-Video On-Screen Display Format:
If using S-Video output use the ◀ ▶ buttons to select NTSC or PAL, whichever matches your display. If your display supports both formats, try NTSC first.

Preferred Video Output:
Use the ◀ ▶ buttons to select Component or HDMI – the video will be optimized for that type. The other output is disabled except to show menus. When Component is selected HDMI-only selections are not shown.

Output Resolution:

Input from S-Video, Component, and HDMI is scaled to this resolution for Component and HDMI output. If interlaced to progressive scan conversion is in effect, it is uncompromisingly pixel-adaptive even with 1080i, and the same robust film mode detection applies as with standard-definition interlaced input.

Resolution is expressed as follows:

number of pixels across the screen ⟶   ⟵ frames per second (Hz)

1920x1080p60

number of pixels or lines from top to bottom ⟶   ⟵ scan type: p=progressive, i=interlaced
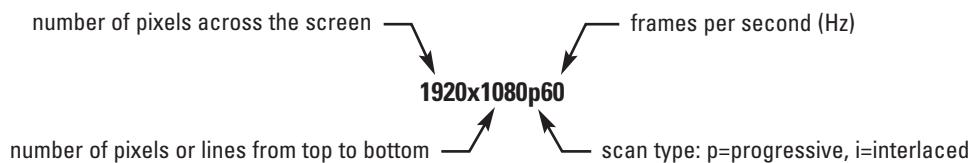
From the list below, use the setting that gives the best picture on your display. Other resolutions and refresh rates are available through Live Video Settings Editor including computer monitor and custom resolutions.

- 720 x 480i or 480p at 60 Hz (480i is not applicable to DVI input on display)
- 720 x 576i or 576p at 50 Hz (576i is not applicable to DVI input on display)
- 1280 x 720p at 50 Hz or 60 Hz
- 1024 or 1280 or 1360 or 1366 x 768p at 60 Hz (DVI input on display is required)
- 1920 x 1080i at 50 or 60 Hz
- 1920 x 1080p at 24 Hz or 50 Hz* or 60 Hz*
- Custom
- Auto[§]

*high-bandwidth cable is required

Color Space:

Set this to match your display type: HDTV (high definition TV), SDTV (standard definition), or Auto[§].

Data Format:

Select YCbCr 4:2:2, YCbCr 4:4:4, Studio RGB, Extended RGB, or Auto[§] – whichever looks best. When YCbCr is selected, the HDMI output uses YCbCr format and Component output uses YPbPr.

To determine whether Studio vs Extended RGB is the correct setting, compare shadow detail in dark scenes or play the color bar test pattern in section 4.11 and look at the stripes in the lower right. If using YCbCr output, compare detail around edges in colorful scenes to determine whether 4:2:2 vs 4:4:4 is best.

If colors look totally wrong with all sources, <u>try all settings before contacting tech support</u>. If colors look wrong only when certain sources are selected, see section 4.11.

§ Auto setting: Works with most displays, but you may get a better result selecting the format manually.

Letterbox:
When the source's aspect ratio (the proportion of image width to height) does not match the display's aspect ratio and you want to preserve the original image's proportions, the unused areas of the screen will be blank. You can select the shade of these areas from ten levels between light gray and black. If you do not want letterbox (bars on top/bottom) or pillarbox (sidebars) on your screen, see section 4.11.

Synchronization:
Try Inverted setting if the image via HDMI is not centered or does not show – typically needed only with some older displays.

Component 2 Out:
The second Component video output can be configured in one of the following three ways or turned Off:

- MAIN output, processed (same signal as Component 1).

- MAIN output, passthrough – this bypasses the video processing and on-screen display is not available. If a secondary display in the main room does not accept the format being fed to the main display, use this setting.

- ZONE2 output – bypasses video processing and on-screen display not available.

3.2   SET TIME / TIMERS

The time and day, plus 6 different timers are set in this menu. The timers in the processor are like an alarm clock, but allow two different timer settings for each of MAIN, ZONE2, and ZONE3.

```
2. SET TIME / TIMERS
a. FORMAT: 12 Hr
b.   TIME: 12:00 AM
c.    DAY: Sunday
d. ALL TIMERS: Disabled
e. SET MAIN TIMERS
f. SET ZONE2 TIMERS
g. SET ZONE3 TIMERS
```

To set Time and Day:

- Enter the setup menu. Go to SET TIME / TIMERS and press **SELECT**.
- Press the ⌄ button until you reach FORMAT.
- Use the ◄ ► buttons and choose 12 Hr or 24 Hr.
- Press the ⌄ button to go to TIME.
- Press **SELECT**. "12" or the current hour will be highlighted in red.
- Use the Master Control Knob or the ⌃ ⌄ buttons to set the current hour.
- Press the ► button. "00" or the current minutes will be highlighted.
- Use the Master Control Knob or the ⌃ ⌄ buttons to set current minutes.
- Press **BACK** to return to the menu line.
- Press the ⌄ button to go to DAY then use the ◄ ► buttons to set the current day.

All Timers:
This allows you to simultaneously "Enable" or "Disable" all Timers for MAIN, ZONE2, and ZONE3.

Highlighting SET MAIN TIMERS then pressing **SELECT** displays this menu:

```
2e.   SET MAIN TIMERS
a. --- TIMER 1: Off ---
b.  WEEKDAY ON:  8:00 AM
c. WEEKDAY OFF: 11:00 PM
d.  WEEKEND ON: 10:00 AM
e. WEEKEND OFF: 11:00 PM
f.      SOURCE: Last Stn
g.   ON-VOLUME: -35.0 dB
h. --- TIMER 2: Off ---
i.  WEEKDAY ON:  8:00 AM
j. WEEKDAY OFF: 11:00 PM
k.  WEEKEND ON: 10:00 AM
l. WEEKEND OFF: 11:00 PM
m.      SOURCE: Last Stn
n.   ON-VOLUME: -35.0 dB
```

Timer Options:
There are two Timers for Main and each Zone to allow greater flexibility. You can set week and weekend on/off times twice – once for the morning and again for the evening, for example.

Using the ◀ ▶ buttons, TIMER 1 and TIMER 2 choices are:

- **Off** – Timer is disabled.
- **Week** – Timer operates from Monday to Friday.
- **Wkend** – Timer operates on Saturday and Sunday.
- **Wk+Wkend** – Timer operates every day.

On and Off Times:
Auto-on/off times are entered for:

T1 or T2 WEEKDAY ON: Sets the Monday to Friday turn-on time.

T1 or T2 WEEKDAY OFF: Sets the Monday to Friday turn-off time.

T1 or T2 WEEKEND ON: Sets the Saturday and Sunday turn-on time.

T1 or T2 WEEKEND OFF: Sets the Saturday and Sunday turn-off time.

Timers may also be set to only turn on or only turn off (see Example 2) – this way, the processor can be set to turn on automatically, and it won't turn off until you turn it off manually.

If the processor is already on, Timer On settings are ignored to ensure that source and volume are not changed while in use.

Source:
Select what you want to be playing when a Timer turns the power on – any source, any preset FM•AM station, or Last Stn (the tuner setting when processor was turned off). Be sure that the **source** and the **power amplifier** are turned on or will be on at the Timer turn-on time. If your components have trigger inputs, you can set a processor trigger to turn them on (see section 3.11).

On-Volume:
Sets the volume that will play when a Timer turns the power on. The volume increases slowly when a Timer turns the power on.

Example 1: Select a source for the ZONE2 Timer:

- Enter the setup menu. Go to SET TIME / TIMERS and press **SELECT**.

- Press the ▾ button until you reach SET ZONE2 TIMERS.

- Press **SELECT**. The SET ZONE2 TIMERS submenu will appear.

- Press the ▾ button until you reach SOURCE.

- Use the ◂ ▸ buttons to change to desired source.

- Press **BACK** to leave this submenu and return to the SET TIME/TIMERS menu.

To have the Timer turn on to a Preset Station, do the following from the SOURCE menu line:

(setting Preset Stations is explained in section 4.4.1)

- Use the ◂ ▸ buttons to change to "Last Stn".

- Press **SELECT** to highlight "Last Stn".

- Use the ▴ ▾ buttons to select an FM•AM Preset. These scroll from AM 1-1 to AM 1-6 then from FM1-1 to FM3-6 and back to "Last Stn".

- Press **BACK** once you have selected a preset.

The Timer submenu setup procedure is the same for MAIN, ZONE2, and ZONE3.

Example 2: Change ZONE2, TIMER2 to come on Weekdays at 7:30 AM.

- Enter the setup menu. Go to SET TIME/TIMERS and press **SELECT**.

- Press the ▾ button until you reach SET ZONE2 TIMERS.

- Press **SELECT**. The SET ZONE2 TIMERS submenu will appear.

- Press the ▾ button to reach TIMER 2.

- Use the ◂ ▸ buttons to change to "Week".

- Press the ▾ button until you reach WEEKDAY ON.

- Press **SELECT**. The hour is now highlighted. Use the Master Control Knob or the ▴ ▾ buttons to set the hour to "7" AM. (Continuing through "12" will advance the AM/PM settings.)

- Press the ▸ button. "00" minutes will be highlighted.

- Use the Master Control Knob or the ▴ ▾ buttons to set the minutes to "30".

- Press **BACK** to leave this submenu and return to SET TIME/TIMERS menu.

When scrolling between 11 PM and 12 AM settings, the display shows "--:--". Timers set in the "--:--" position will be skipped. For example, to set the Timer to only turn on, set the Off time to "--:--". To set the Timer to only turn off, set the On time to "--:--".

3.3 SPEAKER CONFIGURATION

The Speaker Configuration Setup allows you to enter information about your speakers so that sounds from sources are not lost or distorted.

```
3. SPEAKER CONFIGURATION
a. BASS MANAGEMENT-MOVIE
b. BASS MANAGEMENT-MUSIC
c. SURROUNDS: Dipole
d.    REARS: Dipole-7.1
e.    UNITS: ft
f. CENTER EQ: No
g.   TV SIZE: 30-42 in
h. ROOM RESONANCE FILTER
```

Skip items f. to h. if using Anthem Room Correction on all sources.

Bass Management Configurations for Movies and Music:
The processor memorizes two bass management configurations – if using both (Music configuration is optional), always use **Movie** for sources containing LFE. The BASS MANAGEMENT-MUSIC menu asks whether or not you want to use the same settings as the Movie configuration – the default is "Yes".

Setting up a configuration is described later in this section. Assigning a configuration to a source or enabling automatic activation according to presence/absence of LFE is explained in section 3.6.

If your source components have bass management and time alignment, turn them off by setting all channels "large" and to the same distance in the source components.

Surround and Rear Speaker Quantity and Type:
Surround speakers fall in two radiation pattern categories: Direct and Dipole. No delay is necessary in channels using dipole speakers since most of the sound is delayed through room reflections. When Dipole is selected, distance is matched internally with the greatest one in the LISTENER POSITION menu.

If you are using one rear speaker, set d. REARS to 6.1 and use the Rear-L output.

If you are using no rear speakers, skip the d. REARS setting. It makes no difference what it's set to.

Units:
Feet (ft) or metres (m). This will be used for size and distance measurements.

Center EQ:
When a speaker sits directly above or below a vertical surface such as a TV screen, reflections can change frequency response making dialog less natural. With Anthem's unique CENTER EQ set to "Yes" the negative effects of vertical surfaces close to the front of the speaker can be cancelled.

TV Size:
This determines the CENTER EQ response curve. Select from 18 - 30" / 30 - 42" / 42 - 54" / 54 - 66" / 66 - 78". If UNITS is set to "m" the selections are 45 - 75 cm / 75 - 100 cm / 100 - 135 cm / 135 - 165 cm / 165 - 200 cm.

Since room/TV/furniture acoustics vary as do center channel speakers and their positioning, play a few DVDs and use the setting that provides the clearest dialog even if it doesn't match the TV's size.

Highlighting BASS MANAGEMENT-MOVIE then pressing **SELECT** displays this menu:

```
3a.BASS MANAGEMENT-MOVIE
a. ADV SETTINGS: Off
b.      FRONTS: Small
c.      CENTER: Small
d.   SURROUNDS: Small
e.       REARS: Small
f.        SUBS: 1 Sub
g. XOVER FREQ: 80 THX
h. FRONTS XOVER: -- Hz
i. CENTER XOVER: -- Hz
j.  SURND XOVER: -- Hz
k.   REAR XOVER: -- Hz
l.SUB/LFE XOVER: -- Hz
m. SUB POLARITY: --
n.    SUB PHASE: -- Deg
o. BYPASS LFE XOVER: --
```

Skip items a. to l. if using Anthem Room Correction on <u>all</u> sources.

Advanced Settings:
The default is Off. Use of advanced settings is described later in this section.

Small or Large:
Most speakers should be set to Small and used with a subwoofer unless they use large drivers that play deep bass and LFE accurately. Even then, the question is which speaker can produce deeper and cleaner bass at higher output? It's almost always the subwoofer, which has the advantage of flexible positioning in the room to help control boominess. All THX certified speakers are designed for Small setting.

Subwoofer:

- **1 Sub**   The subwoofer plays two things – LFE and bass from channels set to Small. This setting is preferred by THX. <u>**Use this setting with ARC when using one or more subwoofers.**</u>

- **1 Super** As above except bass from all channels is included, not just the ones set to Small. This setting is <u>not recommended for the Movie configuration</u>.

- **2 Subs** or **2 Supers** – Select if using both subwoofer outputs and <u>not</u> using ARC. This simply reduces the subwoofer channel's test noise level to compensate for the additional subwoofer.

"None" setting for:

- **CENTER** – the center channel plays from the L/R fronts.

- **SURROUNDS** – the L-Surround channel plays from the L-Front channel and the R-Surround channel plays from the R-Front channel (except Dolby Pro Logic modes).

- **REARS** – the rear channels on sources having them play from the surrounds.

- **SUBWOOFER** – the subwoofer channel plays from L/R fronts (forced to Large) and surrounds.

If you are using 5.1 speakers, use the SURROUND outputs and <u>set REARS to None</u> so no sound is lost!

Bass response highly depends on room acoustics and experimentation with subwoofer placement is recommended. Start by temporarily placing the subwoofer in the listening area, play some music with a range of bass and walk around the room. Positions where the bass range sounds smooth are suitable for permanent subwoofer placement as long as decor allows.

Crossover (Xover) Frequency:
The crossover divides audio in two frequency bands, resulting in lower bass level in Small channels and no midrange/treble in the subwoofer. If your subwoofer has a crossover, it should be bypassed – set its frequency control to the highest frequency.

A crossover does not cut frequencies off like a cliff, but rolls them off according to a slope. If set to 80 Hz, for example, your main speakers will still play lower frequencies – they just won't have to play them as loudly. This also lightens the load on the amplifier leaving extra power for mid and high frequencies. Setting the crossover to the lowest number on your speaker's specification page is **unlikely to provide the best result**.

Using the ◄ ► buttons choose a frequency between 25 Hz - 160 Hz suitable for the low frequency capability of your speakers. With THX certified speakers, the crossover should be set to 80 Hz.

LFE is redirected only when Subwoofer is set to No. If set to Yes or Super, the Movie configuration XOVER FREQ should not be set much lower than 80 Hz otherwise some LFE information will be lost.

Advanced Settings – Crossover Frequency:
When ADV SETTINGS is set to On, each speaker type can be set to a Crossover Frequency that best suits its low frequency characteristics and room acoustics. For example, if placing a speaker against a wall causes excessive bass, the Advanced Crossover can be used to roll off the excess bass.

If room acoustics cause response to drop in the crossover region, the subwoofer channel can be set to overlap other channels to compensate, for instance setting SUB/LFE XOVER to 90 Hz and FRONTS XOVER to 70 Hz. In the opposite situation, if there is a bass peak in the crossover region, you can spread settings to flatten response, for example SUB/LFE XOVER to 70 Hz and FRONTS XOVER to 90 Hz.

A very low setting, such as 25 Hz, may be used to protect full-range speakers from potentially harmful signals. Scrolling below 25 Hz or above 160 Hz brings the Off setting which bypasses the crossover.

Advanced Settings – Subwoofer Phase and Polarity:
Certain subwoofer positions can cause bass frequency cancellation. When the front speakers and subwoofer are out of phase or misaligned, they work against each other resulting in weak and dislocated sounding bass. This can be corrected by adjusting Phase and Polarity.

If your subwoofer has these controls, set them to zero/normal before making menu adjustments. The advantage of adjusting through the setup menu is hearing changes instantly from the listening position.

As a general guide, set Polarity to Normal if the subwoofer is near the front speakers and to Inverted if the subwoofer is near the back of the room. With bass material or the "shhhh" noise between FM radio stations playing, compare Normal to Inverted and use the setting that provides louder bass.

The Phase control provides further alignment – listen to FM "shhhh" noise and adjust until bass is loudest.

If using multiple subs, see section 3.5 before adjusting phase and polarity in the setup menu.

Advanced Settings – Bypass LFE Crossover:
If you have set SUB/LFE XOVER to much lower than 80 Hz, the upper portion of the LFE signal will be lost. With BYPASS LFE XOVER set to Yes, LFE goes to the subwoofer without going through the crossover, preventing loss of LFE information. This also applies to the 6-Ch input's SUB input (effectively an LFE input).

Highlighting ROOM RESONANCE FILTER then pressing **SELECT** displays this menu:

ROOM RESONANCE

RESONANCE FILTER

RESULT
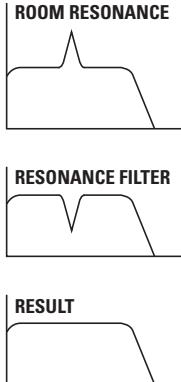
```
3h.ROOM RESONANCE FILTER
a.    TEST TONE: Off
b.   TEST LEVEL:  +0.0dB
c.    TEST FREQ:  21 Hz
d. APPLY FILTER: No
e.  CENTER FREQ: 60 Hz
f. FILTER DEPTH:  1 dB
g. FILTER WIDTH: 20 Hz
h. THX ULTRA2 SUB: No
i.THX BG COMPENSAT'N: NA
```

Skip this menu if using Anthem Room Correction on <u>all</u> sources.

Rooms often have a single prominent resonance peak which can make bass sound boomy, even with the finest subwoofer. The processor has a proprietary set of low frequency test tones that allow you to find and easily remove that resonance peak.

The Room Resonance Filter is a notch filter – it is not designed to boost weaker bass frequencies. While running the test tones, if you discover that instead of a prominent peak there is a prominent dip in response, the best way to fill it is through repositioning the subwoofer and/or listening position. Using electronics alone to accomplish this is often met with frustration, for example, a 10 dB boost would require the amplifier to work ten times harder, as well as speakers that can handle that much more power.

Test Tone and Level:
Test tones sweep from 18 Hz up to the XOVER FREQ (or the SUB/LFE XOVER frequency) that you have set in BASS MANAGEMENT -MOVIE or -MUSIC, whichever is higher. You can vary the level to a comfortable one.

Center Frequency

Filter Center Frequency:
The frequency that is reduced the most when the filter is applied is called the Center Frequency. Set this to the frequency that sounds the loudest or most boomy when the built-in test tones are played. If you're using a sound pressure level meter, set it to C-weighting or Flat.

Filter Depth

Filter Depth:
This is the amount of center frequency 'cut', or reduction in volume, in the subwoofer channel. Frequencies just above and just below the center frequency are also reduced, but not as much. Range is from 1 to 20 dB. Adjust to bring the level of the resonant peak down to the same level as the other frequencies.

Filter Width

Filter Width:
This adjustment varies the range and sharpness of the filter. For example, if Filter Width is set to 3 Hz, the Room Resonance Filter cuts a very narrow range at the filter center frequency. If Filter Width is changed to 18 Hz, a broader range is reduced. Adjust so that resulting frequency response is as flat as it can be made.

Frequency and Depth settings affect Width adjustment range – this changes automatically.

THX Boundary Gain Compensation:
If your listening room layout results in the subwoofer and/or listeners being too close to a wall, an excessive bass effect can result. With a subwoofer that extends to 20 Hz, including all THX Ultra2 certified subwoofers, Boundary Gain Compensation can improve bass balance. To enable, set THX ULTRA 2 SUB to Yes and THX BG COMPENSATION to On.

Procedure for adjusting Room Resonance Filter:

- Enter the setup menu. Go to SPEAKER CONFIGURATION and press **SELECT**.

- Press the ▾ button until you reach ROOM RESONANCE FILTER and press **SELECT**.

- Use the ◀ ▶ buttons to set TEST TONE to Auto. Press **SELECT** to start automatic sweeping of the test tones. Alternatively, you can set TEST TONE to Manual – to vary the frequency, press the ▲ ▾ buttons to reach TEST FREQ, then use the ◀ ▶ buttons to change frequency.

- Some subwoofers are not able to accurately reproduce frequencies below 30 Hz or so, especially at higher levels. In addition, it can be quite difficult to hear these frequencies. If playing them causes unusual sounds indicating the subwoofer is being stressed, do not continue to play them.

- TEST FREQ changes to show the frequency being played during automatic sweep. Listen for (or measure) the frequency that sounds too loud compared to the other frequencies.

- Press the ▾ button until you reach CENTER FREQ and select the frequency that is closest to the test tone frequency that was found to be the loudest.

- Press the ▲ button until you reach APPLY FILTER and set it to Yes.

- Press the ▲ ▾ buttons to go to FILTER DEPTH and FILTER WIDTH. Adjust both to achieve the flattest response across the range of test tones.

- Press **BACK** to stop the test tones and leave this submenu.

3.4   LISTENER POSITION

The Listener Position menu lets you enter the distance between each speaker and the listening area. Ideally, speakers should be placed at an equal distance so their sound arrives at the listening area at the same time, but since this is rarely practical, the processor can delay the sound coming from speakers that are closer to the listener. This way, sound reaches the listening area at the same time from all speakers, and proper imaging can be achieved.

The speaker with the greatest distance setting will have no delay – speakers with shorter distance settings will be delayed according to their setting. Speakers set to Dipole in the SPEAKER CONFIGURATION menu have their distance set internally to the greatest distance that you enter for the other speakers.

```
4. LISTENER POSITION
a.   FRONT-L: 12.0 ft
b.    CENTER: 12.0 ft
c.   FRONT-R: 12.0 ft
d.     SUR-R: Auto
e.    REAR-R: Auto
f.    REAR-L: Auto
g.     SUR-L: Auto
h. SUBWOOFER: 12.0 ft
i. REARS L-R: 4+  ft
```

Distance Adjustment:
Enter the distance between your primary listening area and each speaker. Range is 0-99 ft in 0.5 ft increments or 0-32 m in 0.2 m increments.

> **Example:** Set center speaker distance to 11 feet.
>
> • Enter the setup menu. Go to LISTENER POSITION and press **SELECT**.
>
> • Press the ▼ button until you reach CENTER.
>
> • Use the ◄ ► buttons to change to 11.0 ft.
>
> • When finished, press ▲ ▼ to go to another menu item, or...
>
> • Press **BACK** to leave the submenu and return to the main menu.

Rear-L to Rear-R Distance:
ASA (Advanced Speaker Array) is a proprietary THX technology that processes the sound fed to the two surround and two rear speakers to provide an optimal surround sound experience. When using all 7.1 speaker outputs, placing the two rear speakers close together will provide the largest sweet spot. If for practical reasons you have to place the rear speakers further apart, choose the setting that most closely corresponds to the speaker spacing to optimize the surround soundfield.

3.5   LEVEL CALIBRATION

Level Calibration uses internal test noises to match speaker output levels at the listening position. These noises are also a way of checking system connections between processor, amplifier, and speaker. Audio calibrations from home theater setup discs are not recommended – some use incorrect methods.

A sound pressure level (SPL) meter with C-weighting is recommended if not using ARC. Measure from the listening position, pointing the meter up and holding it away from your body to prevent reflections.

The FRONTS, CENTER, SURROUNDS, REARS, SUB, and BALANCE buttons on the front panel and remote control do <u>not</u> change settings in this menu – they provide on-the-fly adjustment memorized according to input format in case a source needs it (sections 4.6 and 4.7).

```
5. LEVEL CALIBRATION
a. NOISE SEQUENCE: Off
b.      FRONT-L:   +0.0 dB
c.       CENTER:   +0.0 dB
d.      FRONT-R:   +0.0 dB
e.        SUR-R:   +0.0 dB
f.       REAR-R:   +0.0 dB
g.       REAR-L:   +0.0 dB
h.        SUR-L:   +0.0 dB
i.   MOVIE SUB:   +0.0 dB
j.   MUSIC SUB:   +0.0 dB
```

Raise Test Level if ARC indicates excessive background noise during measurement – no other adjustments are necessary when using ARC.

Test Noise Sequence:
Test noise plays from one speaker at a time, changing manually using the ▲ ▼ buttons or automatically every two seconds by setting NOISE SEQUENCE to Auto using the ◀ ▶ buttons, then pressing **SELECT**.

Source switches to FM • AM when any test noise is played. (Anlg-Dir bypasses the test noise generator.)

Level Calibration of each channel:
Balances speaker levels to one another. If you're calibrating by ear, use the remote control and sit in the listening area when adjusting. If using an SPL meter, adjust level so it reads 75 dB for each channel. If Noise Level is set while Front-L is at 0 dB, no adjustment of Front-L is needed since the output is the same. <u>If using a powered subwoofer, make a rough adjustment with its input level control</u> before setting sub level in this menu or using ARC. Speakers set to None in the Speaker Configuration menu are skipped.

If SUBS is set to Super in BASS MANAGEMENT-MOVIE (not advised) or BASS MANAGEMENT-MUSIC, do not rely on an SPL meter to set subwoofer level – set it by ear while playing various sources. Level Calibration cannot take into account the bass that's added to the subwoofer from speakers set to Large, which results in more bass during playback than the calibrated level.

If using multiple subwoofers they must be balanced to one another. Play the subwoofer test noise with only one subwoofer connected at a time. Set its input level dial so the SPL meter reads 71 dB from the listening area if using two subs or 67 dB if using four subs. Repeat this for the remaining subs. When all are connected the result should be around 75 dB. ARC sets the final level. If not using ARC, change the level of all subs equally for a combined result of 75 dB SPL.

To fine-tune the level or phase of each sub relative to one another, listen to FM "shhhh" noise through the subwoofers only (turn off main amplifiers) and adjust the sub's control until bass is loudest in the listening area.

Procedure for Manual Test Sequence (not needed when using ARC)**:**

- Enter the setup menu. Go to LEVEL CALIBRATION and press **SELECT**.
- Use the ◂ ▸ buttons to set NOISE SEQUENCE to Manual.
- Press the ▴ ▾ buttons to go from speaker to speaker.
- As each speaker plays, use the ◂ ▸ buttons to adjust its loudness relative to other speakers.
- Press **BACK** to stop the test noise.

Procedure for Auto Test Sequence (not needed when using ARC)**:**

- Enter the setup menu. Go to LEVEL CALIBRATION and press **SELECT**.
- Use the ◂ ▸ buttons to set NOISE SEQUENCE to Auto.
- Press **SELECT** to start the automatic sequence.
- As each speaker plays, use the ◂ ▸ buttons to adjust its loudness relative to other speakers. After you make an adjustment, the next speaker will play.
- Press **BACK** to stop the test noise.

3.6   SOURCE SETUP

This is where you set up each source and path according to how you want them to be used.

```
6.        SOURCE SETUP
a. CD
b. 2-Ch
c. 6-Ch
d. TAPE
e. FM/AM
f. DVD1
g. DVD2
h. DVD3
i. DVD4
j. TV1
k. TV2
l. TV3
m. TV4
n. SAT1
o. SAT2
p. VCR
q. AUX
r. ZONE2 COPY: Manual
s. ZONE3 COPY: Manual
t.   REC COPY: Manual
```

Copy MAIN to ZONE or REC:
If you want MAIN to always be copied to another path (see section 4.3), change Manual to Always. This is recommended if you want a source that only has digital audio output to be used in ZONE2, ZONE3, or REC, or if you want MAIN and another path to always play the same source. "Always" setting is <u>not</u> recommended if you want independent source selection – see the highlighted part of section 2.2.

Source Setup:
Besides setup of each source, DVD, TV, and SAT have expanded memory allowing you to set multiple configurations, which are useful for two reasons:

- Use multiple layers for same source, with different video adjustments on each layer, such as aspect ratio control (see section 4.11).

- Use multiple layers with different sources when you have more than nine source components.

To enable DVD2, DVD3, DVD4, TV2, TV3, TV4, or SAT2, at the top of its submenu change SAME AS to Custom to create its own Source Setup profile, or to any of the other sources to use the same Source Setup profile but with different video processing adjustments.

To copy settings from one source to another layer while having the ability to make changes to the new layer, select another source for SAME AS then press **SELECT**. When asked "Are you sure?" that you want to copy settings, use the ◀ ▶ buttons to change No to Yes and press **SELECT**. The new layer becomes Custom using the copied settings and changes can then be made.

Once set up, select a layer by pressing the source button one, two, three, or four times, or through the direct-access macros in Appendix A.

Highlighting DVD1 then pressing **SELECT** displays this menu – the other submenus are similar:

```
6f.  DVD1 SOURCE SETUP
a.       RENAME: DVD1
b. VID OUT CNFG: 1
c. SCALER INPUT: HDMI1
d. COMPONENT IN: 1
e.   S-VIDEO IN: DVD
f. COMPOSITE IN: DVD
g. AUDIO IN: Dig HDMI
h. AUTO DIG: No
i. ANLG AUD: NA
j.    MUTING: Med
k.EQ LF +0.0dB HF +0.0dB
l. BASS MGR: Movie
m.   ROOM EQ: On
n. LIP-SYNC:   0.0 ms
```

Rename:

The source names that appear on the front panel display and the on-screen display can be changed to another name, up to six characters long. The following characters are available:

A, **B**, **C**....**Z**, **a**, **b**, **c**....**z**, blank, dash (–), period (.), slash (/), **0**, **1**, **2**....**9**, colon (:).

When a source is renamed, the new name appears next to the factory-assigned name in the Source Setup and Mode Presets root menus and at the top of the renamed source's submenu.

> **Example:** Rename "AUX" to "GAME".
>
> • Enter the setup menu. Go to SOURCE SETUP and press **SELECT**.
>
> • Press the ▼ button until you reach AUX and press **SELECT**.
>
> • RENAME: AUX will be highlighted in red.
>
> • Press **SELECT**. The first character "A" will be highlighted in red.
>
> • Use the Master Control Knob or the ▲ ▼ buttons to change characters. Change the first one to "G".
>
> • Press the ▶ button to move to the next character. Change it to "A".
>
> • Use the ◀ ▶ buttons to move to each remaining character. Change to "M" and "E".
>
> • Press **BACK** to leave the submenu and return to the main menu.

Video Output Configuration (MAIN only)**:**

Choose between configurations 1 to 4 as set in the VIDEO OUTPUT menu, or Last Used. When Last Used is selected, the video configuration will be the same as the one that the previously selected source was using.

Scaler Input (MAIN only)**:**
Assign which input is used by the video processor when the source is selected – any HDMI, Component video, S-Video input, or "None". Before setting this, be sure that you have read section 2.1. Note that if S-Video is selected, the input connection is the one specified in S-VIDEO IN. To increase seeking speed for the seek function in section 4.4, set this to None if the source does not use video processing.

Component, S-Video, Composite Video Inputs:
Assign which video input (or None) is used for unprocessed video switching when the source is selected, including in ZONE2, ZONE3, and REC.

Audio In (MAIN only)**:**
There are three input types to choose from – Digital, Analog-DSP, and Analog-Direct. After highlighting AUDIO IN use the ◀ ▶ buttons to select an input format.

24 ↑ 192
ANTHEM PRECISION
UPSAMPLER
PCM | Dolby Digital | DTS
In Digital and Analog-DSP, all channels are upsampled to 24-bit / 192 kHz ensuring the finest in high-end sound reproduction. This applies on all sources not in Analog-Direct mode.

- **Dig** (Digital)**:** Choose any HDMI, coaxial, optical, or the AES/EBU connection. Any digital input can be assigned to multiple sources. This allows, for example, two setups for the same DVD player – one for DVDs using DVD1 source setup, and the other for CD music using CD source setup. Note that Dolby Digital and DTS are transmitted <u>only</u> through a digital connection.

- **Anlg-DSP** (Analog with Digital Signal Processing)**:** High-end A/D converters are used to enable the same processing available to digital inputs including Anthem Room Correction, bass management, time alignment, surround mode, bass/treble, lip-sync delay, and THX. If you want your subwoofer to play from an analog L/R input, use this setting.

- **Anlg-Dir** (Analog-Direct)**:** Only level adjustment is available for analog input. Its only practical use is to compare with DSP mode and demonstrate how far audio has come since the analog-only days.

If Preferred is set to HDMI in menu 1 and HDMI audio is selected here, Scaler Input must also be HDMI.

Auto Digital (MAIN only)**:**
If set to Yes, the input type switches to Digital when sensing a digital clock signal from a source and to Analog-DSP when no clock signal is present. This feature is useful with older digital cable boxes that use the digital output for digital channels and analog output for analog channels.

   Example: Change SAT1 Digital Input to optical.

   - Make sure satellite receiver is connected to OPT1 and playing.

   - Enter the setup menu. Go to SOURCE SETUP and press **SELECT**.

   - Press the ▼ button until you reach SAT1 and press **SELECT**.

   - Press the ▼ button until you reach AUDIO IN.

   - Use the ◀ ▶ buttons to change to OPT1 (sound will now be heard).

   - Press **BACK** to leave the submenu and return to the main menu.

Analog Audio:
If Audio In is set to analog, assign which input is used – any analog audio input can be used.

Muting (MAIN only)**:**
This eliminates popping sounds that may occur with some digital source components during a bitstream change. If popping is heard when changing chapter on a DVD or channel on a digital satellite receiver or cable box, use Max setting. However, if the beginning of a track is cut off when playing a CD, use Min setting.

EQ (MAIN only)**:**
For sources set to Digital or Anlg-DSP, you can preset low and high frequency levels. This is useful for source components that have frequency irregularities. After highlighting the EQ line, press **SELECT** and use the ◀ ▶ buttons to select LF (low frequency) or HF (high frequency), then use the ▲ ▼ buttons to adjust. In the FM/AM Setup/Presets menu, FM and AM can be adjusted separately. The EQ settings in this menu and the on-the-fly BASS / TREBLE adjustments do <u>not</u> affect each other (see section 4.7).

Bass Manager (MAIN only)**:**
Choose between Movie or Music configuration as set in the Bass Management menu, or Auto-LFE. When Auto-LFE is selected, the Movie configuration is used if the source contains LFE, and changes to the Music configuration at all other times. Auto-LFE is recommended when using two bass management configurations and the same player for DVDs and CDs.

Room EQ (MAIN only)**:**
To disable room correction equalization performed with the ARC-1 microphone kit, change this to Off. If measurement info isn't loaded "NA" is displayed.

Lip-Sync (MAIN only)**:**
Video can become unsynchronized with audio for different reasons. The Statement D2v's video processing is considered to be synchronized with the audio because it only causes a 24 millisecond delay, which is less than the duration of one frame. If audio is heard before its corresponding image is seen, you can set up to 170 milliseconds of audio delay. To adjust while watching the image see section 4.9.

> **Example:** Set DVD1 Lip-Sync delay to 24 milliseconds.
>
> • Enter the setup menu. Go to SOURCE SETUP and press **SELECT**.
>
> • Press the ▼ button until you reach DVD1 and press **SELECT**.
>
> • Press the ▼ button until you reach LIP-SYNC and press **SELECT**.
>
> • Use the ◀ ▶ buttons to move from digit to digit and the ▲ ▼ buttons to adjust to 24 ms.
>
> • Press **BACK** to leave the submenu and return to the main menu.

3.7   MODE PRESETS

Mode and THX presets are applied when the source is selected or MAIN is turned on. Each input format except mono and Anlg-Dir has a setting. **If you do not want to use presets, set them to Last Used.**

After selecting a source in the MODE PRESETS root menu, a menu such as the DVD1 example below appears. Use the ▲ ▼ buttons to highlight an input format then use the ◄ ► buttons to select. For descriptions of surround modes and **when they can be applied** refer to section 4.8.

```
7f.  DVD1 MODE PRESETS
a. 2.0: AnthemLogic-Cin
b.2Sur: PLIIx Movie
c. 6.0: PLIIx Movie
d. DD5: PLIIx Movie
e.  EX: PLIIx Movie
f. DTS: Neo:6
g.  ES: DTS-ES Matrix
h. 7.1: None
```

Program	Preset Selections
• **2.0**	For stereo input, select any mode in section 4.8.3, THX Games Mode, or Last Used. Dolby Pro Logic, Pro Logic IIx Movie, and Neo:6 Cinema can be set with or without THX Cinema.
• **6.0**	Select your playback preference for multichannel PCM (via HDMI) and 6-Ch analog input: PLIIx Movie (with or without THX Cinema), PLIIx Music, Dolby D EX, THX Surround EX, THX Cinema, THX Ultra2 Cinema, THX MusicMode, THX Games Mode, Neo:6 (with or without THX Cinema), Last Used, or None (see sections 4.8.4 and 4.8.6).
	The following apply to Digital inputs only:
• **2.0-Sur**	Separate setting especially for surround-flagged Dolby Digital 2.0 material (section 4.8.2), normally PLIIx Movie but any setting that applies to regular stereo input can also be used.
• **DD-5.1**	Select your playback preference for Dolby Digital 5.1 material: PLIIx Movie (with or without THX Cinema), PLIIx Music, Dolby D EX, THX Surround EX, THX Cinema, THX Ultra2 Cinema, THX MusicMode, THX Games Mode, Neo:6 (with or without THX Cinema), Last Used, or None (see sections 4.8.4 and 4.8.6).
• **DD-EX**	For material encoded in Dolby Digital Surround EX: PLIIx Movie (with or without THX Cinema), PLIIx Music, Dolby D EX, THX Surround EX, Neo:6 (with or without THX Cinema), Same as DD-5.1, Last Used, or None (see sections 4.8.4 and 4.8.6).
• **DTS-5.1**	For DTS material: Neo:6 (with or without THX Cinema), PLIIx Movie (with or without THX Cinema), PLIIx Music, Dolby D EX, THX Cinema, THX Ultra2 Cinema, THX MusicMode, THX Games Mode, Last Used, or None (sections 4.8.5 and 4.8.6).
• **DTS-ES**	For DTS-ES: DTS-ES Matrix (with or without THX Cinema), PLIIx Movie (with or without THX Cinema), PLIIx Music, Dolby D EX, Same as DTS, Last Used, or None (see sections 4.8.5 and 4.8.6). Note that for ES Discrete, this setting is overridden and playback is in 6.1.
• **7.1**	For HDMI 7.1-channel: THX Cinema, Last Used, or None (see section 4.8.6).

3.8 ANALOG INPUT LEVELS

For sources set to Anlg-DSP or Anlg-Dir in under Source Setup, you can match input levels in MAIN to each other so there are no large changes in volume as you change sources. This is also where recording level is set when using the processor as an analog-to-digital converter (see sections 3.6, 3.9, and 4.3).

```
8. ANALOG INPUT LEVELS
a.      CD:   +0.0 dB
b.    2-Ch:   +0.0 dB
c.    6-Ch:   +0.0 dB
d.    TAPE:   +0.0 dB
e.   FM/AM:   -5.0 dB
f.    DVD1:   +0.0 dB
g.    DVD2:   +0.0 dB
h.    DVD3:   +0.0 dB
i.    DVD4:   +0.0 dB
j.     TV1:   +0.0 dB
k.     TV2:   +0.0 dB
l.     TV3:   +0.0 dB
m.     TV4:   +0.0 dB
n.    SAT1:   +0.0 dB
o.    SAT2:   +0.0 dB
p.     VCR:   +0.0 dB
q.     AUX:   +0.0 dB
```

If a source that is set to Analog-DSP is playing while you adjust the Input Level, you will notice a vertical bar graph to the left of the dB settings. With the on-screen display, this Bar Graph has a green, pink, and red area. The pink area, when showing, represents the last 6 dB of undistorted range and the red area, when showing, indicates overload. On the front panel display the overload indication is the uppermost segment, and the one below it is the "6 dB or less remaining" indicator.

Before making changes or adjustments in this menu, have all source components playing music with comparable dynamics. As you switch highlighted source, you will hear that component play. Remember, input levels applies only to analog sources and the bar graph only works with Analog-DSP setting.

Example: Adjust TAPE Input Level.

- Make sure a source is connected to TAPE Analog L/R, set accordingly in menu 6 and playing.
- Enter the setup menu. Go to ANALOG INPUT LEVELS and press **SELECT**.
- Press the ▾ button until you reach TAPE: +0.0 dB.
- Press **SELECT**. +0.0 dB will be highlighted in red.
- Use the ▴ ▾ buttons to change the Level.
- When finished, press **BACK** then ▴ ▾ to go to another source, or...
- Press **BACK** to leave the submenu and return to the main menu.

3.9   ADC / AUDIO OUTPUT

In the ADC / Audio Output menu you can set analog to digital conversion for the digital Record output and configure the balanced analog outputs.

```
9. ADC / AUDIO OUTPUT
a. 6-CH ANLG-DSP: 96 kHz
b. 2-CH ANLG-DSP:44.1kHz
c. MAIN>REC: 24Bit
d. DIGITAL2: DIGITAL 1
e.  BAL OUT: Ctr2/Sub2
```

Sampling Frequency:
When a source that is set to Anlg-DSP is copied from MAIN to RECORD, the analog signal is converted to digital using the processor's high-end A/D converters, and sent to DIGITAL1. This is useful for recording analog sources on a CD burner or computer with S/PDIF input on the sound card. You can select from 44.1, 48, 88.2, or 96 kHz sampling rates. Recording level is set in the Analog Input Levels menu.

Use 48, 88.2, or 96 kHz only if the equipment connected to DIGITAL1 and DIGITAL2 accepts those rates. CD audio always uses 44.1 kHz.

The 6-Ch input has its own setting. When copied from MAIN to RECORD, the output is a 2-channel downmix.

Bit Rate of DIGITAL1 when MAIN is copied to REC**:**
Choose from 16 or 24 bit output, to match the recorder. At 16 bits, dither is added to improve low level signals.

Output of DIGITAL2:
Set it to have the same output as DIGITAL1, or a fixed output from any source set to Digital (DVD1, SAT1, etc.). DIGITAL1 and DIGITAL2 transmit data from digital sources in the same format it comes in – if it's Dolby Digital or DTS encoded, it stays that way and can be linked to other digital equipment.

Balanced Output:
If the Balanced CENTER2 and SUB2 outputs are not in use for a second center channel or subwoofer in MAIN, they can be used as Balanced ZONE2 L/R outputs. This is advantageous if the ZONE2 power amplifier has XLR inputs and is far from the processor, requiring a long interconnect.

3.10 VOLUMES / PATH NAMES

This menu allows you to define the power-on volume settings, set whether or not MAIN outputs shut off when headphones are used, and to rename ZONE2, ZONE3, and RECORD.

```
10. VOLUMES / PATH NAMES
a.    MUTE LEVEL: Silent
b. MAIN ON VOLUME: -35.0
c.MAIN MAX VOLUME: +10.0
d.    ZONE2 ON VOL: -35.0
e.   ZONE2 MAX VOL:  +0.0
f.    ZONE3 ON VOL: -35.0
g.   ZONE3 MAX VOL:  +0.0
h.   HPHONE ON VOL: -35.0
i. HPHONE MAX VOL: +10.0
j.HPHONE MUTE SPK: No
k.   RENAME ZONE2: ZONE2
l.   RENAME ZONE3: ZONE3
m. RENAME RECORD: RECORD
```

Mute Level:
When MUTE is pressed, sound can cut out completely, or decrease in volume by the amount that you set to keep some of it in the background – select from Silent or –5 to –30 dB in 5 dB steps.

Power-On Volume:
When you turn MAIN, ZONE2, or ZONE3 on, or plug in your headphones, the volume for each will come on at the known levels you have set in this menu. This prevents surprises when not knowing the volume someone had set when turning the processor off, then having the power-on volume be too loud or quiet. You can set independent volumes for MAIN, ZONE2, ZONE3, and HEADPHONE.

Maximum Volume:
These settings allow you to limit the volume of MAIN, ZONE2, ZONE3, or HEADPHONE to avoid damaging your equipment and/or your ears. This can also serve as a parental volume control feature. The range of settings available for MAIN is from –95.5 dB to +31.5 dB in steps of .5 dB, and for ZONE2, ZONE3, and HEADPHONE, the range is from –70.0 dB to +10.0 dB in 1.25 dB steps.

To set a fixed output for ZONE2 or ZONE3, scroll MAX VOL past +10.0 dB to select LockOnVol, then set the desired fixed output level in ON VOL. When the path is on, "Lock" is displayed beside the volume readout to indicate that its volume cannot be changed with the volume control.

Headphone Mutes Speakers:
Determines whether or not the MAIN speakers turn off when headphones are plugged into the front panel:

- **Yes**   The MAIN speakers mute. "HPHONE" is displayed instead of "MAIN" to indicate that adjusting volume, bass, treble, and balance affect HEADPHONE only.

- **No**   MAIN speakers continue to play when headphones are plugged in.

Rename Path:
The path names that appear on the front panel and on-screen displays can be changed to another name up to six characters long – the procedure is the same as Rename Source under Source Setup.

3.11 TRIGGERS / IR / RS232

When a trigger output on the processor is connected to the trigger input of another component, such as an amplifier or projector, the processor can turn it on or off according to the trigger's Setup. For components that do not have trigger inputs, a triggerable power bar may work (see your dealer).

Three 12 volt trigger outputs are provided – Trigger1 and Trigger2 each have maximum current output of 50 mA and Trigger3 has maximum current output of 200 mA. There is a quarter of a second delay between each trigger to minimize line voltage drops caused by switching on too many devices at once.

```
11. TRIGGER / IR / RS232
a. ALL TRIGGERS:Disabled
b. SET TRIGGER 1
c. SET TRIGGER 2
d. SET TRIGGER 3
e. SET IR-INPUTS
f.    BAUD RATE: 19200
g. FLOW CONTROL: None
h. RS-232 TX STATUS: Off
```

All Triggers:
When "Disabled" all triggers remain off. When "Enabled" the trigger chart below is used to set conditions. For custom installation, the "RS-232 Ctrl" setting uses external control.

Set Trigger:
Highlighting SET TRIGGER 1 then pressing **SELECT** displays this menu:

```
11b. SET TRIG-1 SOURCES
            MAIN Z2 Z3 REC
a. POWER:    *   -  -
b.    CD:    -   -  -   -
c.  2-Ch:    -   -  -   -
d.  6-Ch:    -   -  -   -
e.  TAPE:    -   -  -   -
f. FM/AM:    -   -  -   -
g.  DVD1:    -   -  -   -
h.  DVD2:    -   -  -   -
i.  DVD3:    -   -  -   -
j.  DVD4:    -   -  -   -
k.   TV1:    -   -  -   -
l.   TV2:    -   -  -   -
m.   TV3:    -   -  -   -
n.   TV4:    -   -  -   -
o.  SAT1:    -   -  -   -
p.  SAT2:    -   -  -   -
q.   VCR:    -   -  -   -
r.   AUX:    -   -  -   -
```

In the example shown, TRIGGER 1 activates when MAIN power is turned on. Trigger outputs can also be set to activate according to source instead of Power.

After highlighting Power or a source, press **SELECT** and use the ◄ ► buttons to move from one path to another. To set the condition, use the ▲ ▼ buttons to change the "–" to a "*". Don't forget: In the root menu you have to set ALL TRIGGERS to Enabled for the triggers to work.

Changes to the trigger setup do not take effect until exiting from the setup menu, to avoid unnecessary rapid turning off and on of triggers while making changes.

Example: Activate Trigger2 when DVD1 is selected in MAIN.

- Enter the setup menu. Go to TRIGGER / IR / RS232 and press **SELECT**.

- Upon entering this menu item, ALL TRIGGERS will be highlighted in red.

- Use the ◄ ► buttons to change to Enabled.

- Press the ▼ button to go to SET TRIGGER 2. Press **SELECT**.

- Use the ▲ ▼ buttons to go to DVD1. Press **SELECT**.

- Use the ▲ ▼ buttons to change the "–" to "*".

- Press **BACK** twice to leave this submenu.

Set IR Inputs:
This allows you to enable or disable the processor's infra-red inputs. Being able to do so can be useful when an IR receiver connected to the processor is in the same room as the processor. In this case the processor can receive two IR signals for the same command – one through the front and one through the back. The double-command may affect responsiveness – disabling the front IR solves this problem.

```
11e. SET IR-INPUTS

                  MAIN  Z2  Z3
   a.   FRONT IR:   *    *   *
   b.  REAR IR 1:   *    *   *
   c.  REAR IR 2:   *    *   *
   d.  REAR IR 3:   *    *   *
```

After highlighting an IR input, press **SELECT** and use the ◄ ► buttons to move from one path to another. To turn the input off, use the ▲ ▼ buttons to change the "*" to a "–". Do this through the front panel, since remote control commands are ineffective once an IR sensor is turned off.

If the processor does not respond to remote control commands, enter the Setup using the front panel buttons, go to the TRIGGER / IR / RS232 menu then SET IR-INPUTS, and make sure the FRONT IR settings are set to "*". **Try this before contacting technical support (see also section 5.6).**

Baud Rate and Flow Control (normally for use only by custom installers)**:**
The Baud Rate (adjustable from 1200 to 115200 bps), and Flow Control (RTS, CTS, or None), allow configuration of the serial port communication parameters.

RS-232 TX Status (normally for use only by custom installers)**:**
When On, all commands, status changes, and control information are echoed through the RS-232 port.

3.12   DISPLAYS / TIMEOUT

This menu allows you to configure on-screen display, front panel display, and selection time.

```
12.  DISPLAYS / TIMEOUT
a. MAIN OS OUT: S-V + HD
b.MAIN OS INFO:All Zones
c.MAIN OS POS'N: Bottom
d.MAIN OS COLOR: Blue
e.MAIN VID MUTE: Gray
f.   Z2 OS OUT: S-V Only
g.  Z2 OS INFO: Z2 Only
h. Z2 OS POS'N: Bottom
i. Z2 OS COLOR: Blue
j. Z2 VID MUTE: Gray
k.   FP WAKE-UP: Up 1
l. DISPLAY TIMEOUT: 5 s
```

Main / Z2 On-Screen Output:
Lets you select the outputs that display on-screen information, or Bypassed, which turns the on-screen display off. If you choose Bypassed, you will have to rely on the front panel display. If you are using S-Video inputs and prefer the appearance of the HD characters, select HD Only – the HD characters will be used if a video signal is present.

Main / Z2 On-Screen Info:
Select the path adjustments that are shown by the on-screen displays. For example, if ZONE2 is set up with an IR repeater for the remote control and you are using the processor in the MAIN room, you may not want to see information about ZONE2. On the other hand, you may want to see the ZONE2 information, for example, while adjusting ZONE2 yourself from the MAIN room.

Main / Z2 On-Screen Position:
Allows you to position the on-screen display to reduce the chance of it interfering with the on-screen display positions of other video components (e.g. satellite receiver's status info). Choose from Bottom, Mid, or Top.

Main / Z2 On-Screen Color:
If the on-screen display of the setup menu appears unstable, it could be that your display is not synchronizing to the blue (factory default) background color. You can change the background color to one that your display can synchronize to – gray and magenta are also available.

Main / Z2 Video Mute Color:
For when there's no video input, select the "no signal" output – gray, blue, or magenta screen.

Front Panel Wake-Up:
If Display is set to Medium, Low, or Off, it can be made to change to a brighter level while you make any adjustment – choose None, Up 1 brightness level, or Hi. When None is chosen and the Display is Off, it will behave as if set to Up 1 to prevent confusion as to whether the power is on or off.

> **Example:** Disable the front panel wakeup.
>
> • Enter the setup menu. Go to DISPLAYS/TIMEOUT and press **SELECT**.
>
> • Press the ▼ button until you reach FP WAKE-UP.
>
> • Use the ◄ ► buttons to change to None.
>
> • When finished, press ▲ ▼ to go to another menu item, or...
>
> • Press **BACK** to leave the submenu and return to the main menu.

Display Timeout:
This is the time that elapses after an adjustment is made in any path. After that, on-screen text disappears, the front panel becomes dim, and the regular MAIN display returns. Adjustable from 1 to 15 seconds.

3.13 SAVE / LOAD SETTINGS

Two memories can back up menu settings. If your system was set up by your dealer, the settings may be saved in Installer memory. You can make further adjustments – save those settings in User memory. Video processor settings (section 4.11) and FM•AM presets are also saved.

```
13. SAVE / LOAD SETTINGS
  a. SAVE USER SETTINGS
  b. LOAD USER SETTINGS
  c. SAVE INSTALLER SET'NS
  d. LOAD INSTALLER SET'NS
  e. LOAD FACTORY DEFAULTS
```

Save and Load Settings:
When saving or loading settings, the processor will prompt you to confirm that you want to replace the current settings – press **BACK** at this point if you don't want to make the changes.

To clear adjustments described in sections 4.6 and 4.7, save User Settings, then load Factory Defaults, then load User Settings. The Setup will remain as it was. If certain channels don't sound as loud as they should under certain conditions, and you have calibrated levels according to section 3.5, <u>try this before contacting technical support</u>. The cause may just be a forgotten adjustment, or an adjustment that someone else made and didn't tell you. **Happens sometimes!**

Example 1: Save User Settings.

- Enter the setup menu. Go to SAVE / LOAD SETTINGS and press **SELECT**.

- Upon entering this menu item, SAVE USER SET'NS will be highlighted in red.

- Press **SELECT**. You will be asked to confirm that you want to over-write current settings.

- Use the ◄ ► buttons and change to Yes. If you are using a Password, you will be asked for it. Use the **0 – 9** buttons to enter your Password. The on-screen display will say Saving Successful and the front panel will say Done.

Example 2: Load Installer Settings.

- Enter the setup menu. Go to SAVE / LOAD SETTINGS and press **SELECT**.

- Press the ▼ button until you reach LOAD INSTALLER SET'NS.

- Press **SELECT**. You will be asked to confirm that you want to restore installer settings.

- Use the ◄ ► buttons to change to Yes and press **SELECT**. The on-screen display will say Installer Settings Loaded and the front panel will say Done.

Example 3: Load Factory Defaults.

- Enter the setup menu. Go to SAVE / LOAD SETTINGS and press **SELECT**.

- Press the ▼ button until you reach LOAD FACTORY DEFAULTS.

- Press **SELECT**. You will be asked to confirm that you want to load factory settings.

- Use the ◄ ► buttons to change to Yes and press **SELECT**. The on-screen display will say Factory Defaults Loaded and the front panel will say Done.

3.14   LOCKOUT / PASSWORDS

Passwords are used to protect the saved User and Installer settings. Once you have set a password, it can also be used as a Lockout to prevent settings from being changed by anyone without one of the passwords.

```
14. LOCKOUT / PASSWORDS
a. LOCK SETTINGS
b. SET USER PASSWORD
c. SET INSTALLER PASSW'D
```

Lock Settings:
When set to Yes, entry to the setup menu is prevented unless the password is entered first.

Set User or Installer Password:
Whether or not settings are locked, if a password is set, it will still be required to save changes to User or Installer settings. Pick a 4-digit number that you will remember easily. To enter it, use the **0 – 9** keys on the remote control (password cannot be entered from the front panel). To change a password, enter the old one, then enter (and confirm) the new one. Keep a record of your password in case it's forgotten!

> **Example 1:** Set User Password (remote control only).
>
> • Enter the setup menu. You must enter the USER or INSTALLER password if there is one.
>
> • Go to LOCKOUT / PASSWORDS and press **SELECT**.
>
> • Press the ▾ key to go to SET USER PASSWORD.
>
> • Press **SELECT**. You will be asked to enter a four digit number – use the **0 – 9** keys. If you are changing your password you will be asked to enter your old one first. You will also be asked to confirm your new one.

Clearing the password: When asked for your new password, press the ▸ key four times. You will also be asked to confirm – press the ▸ key four times again. Message will say "User Password Removed".

> **Example 2:** Lock Settings (remote control only).
>
> • Enter the setup menu. Go to LOCKOUT / PASSWORDS and press **SELECT**.
>
> • Upon entering this menu item, LOCK SETTINGS will be highlighted in red.
>
> • Press **SELECT**. You will be asked to enter a password. The USER or INSTALLER password will work.
>
> • Use the ◂ ▸ buttons to change to Yes or No.
>
> • Press **SELECT** or **BACK**.

3.15   ARC-1 ANTHEM ROOM CORRECTION

ARC-1 corrects the effects of reflective surfaces and room boundaries on sound quality by measuring the response of each speaker relative to the listening area and equalizing it. ARC equalizes response without stressing the amplifier or speakers and does not downsample the source material to process it. ARC's filters are neither graphic nor parametric – ARC is a sophisticated system that flattens response using its ability to create practically any suitable function, inherently correcting phase effects created by the room.

The default correction range is up to 5 kHz. Although the limit can be changed if needed, a higher one is generally not advised since the microphone becomes directional at upper frequencies, affecting measurement accuracy especially if the height of the speaker's high frequency driver is not at ear level.

ARC also detects how much the room reinforces low frequencies due to its boundaries and pressurization. This room gain shows as a bump in the target response. ARC does not remove it because if flattened, bass sounds thin. Ideal anechoic speaker response, a straight line as measured in a special non-reverberant facility, is not the same as ideal in-room response which normally includes, to varying degree, this room gain.

ARC senses where each speaker's low-frequency response declines and sets high-pass filters accordingly.

Calibration is set such that average level is the same when comparing EQ "On" vs "Off". Note that to set levels ARC uses a midrange band that's wider than the standard home theater setup noise, which is centered at 1 kHz and narrow so there's no chance its level would be reduced by a crossover.

Sample response:
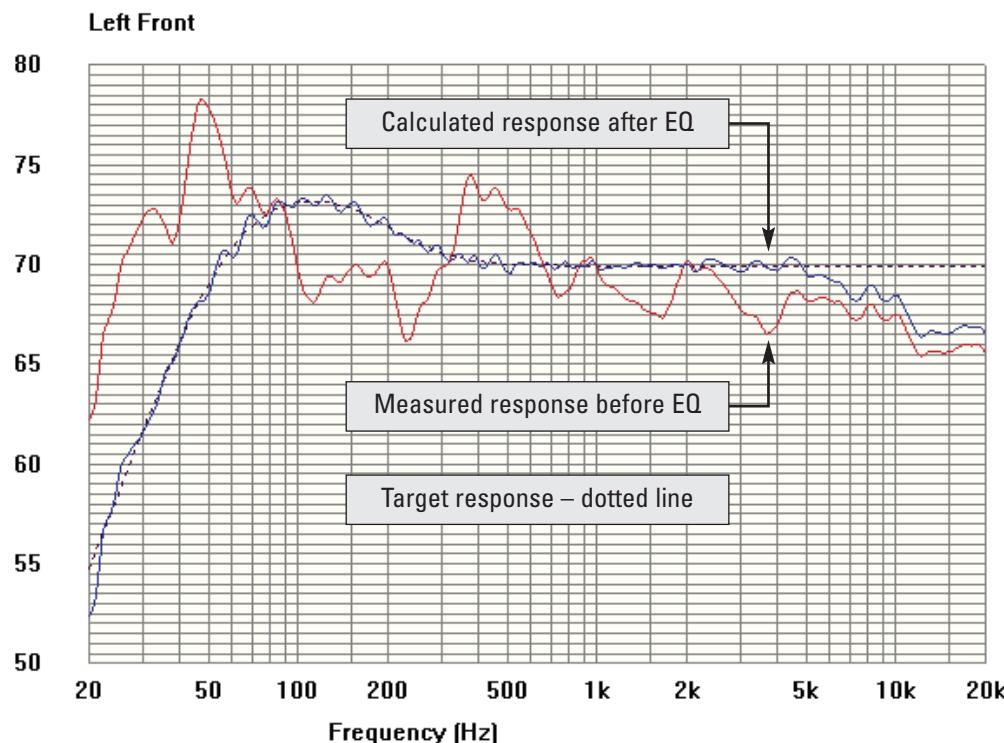
EQ is also available with my subwoofer(s) – should I use it?
Since rooms, correction systems, number of subwoofers, and speaker/listener positions vary, the answer varies although it is best to disable the subwoofer's EQ before running ARC. If the resulting calculated and target curves resemble each other, there is usually no reason to use the sub's EQ. If the curves significantly differ through a wide range, enable the sub's EQ and run ARC again to see if it helps. If you have run ARC with the sub's EQ enabled, ARC must be run again once the sub's EQ is turned off.

Before starting:

- Ensure that the processor software and ARC software that you will be using are compatible with one another – check www.anthemAV.com for latest versions. Processor software installation instructions are in section 6.

- Your ARC-1 microphone, its support files, and your processor are a system with matching serial numbers – substitutions are not possible. Before a mic can be used for measurement, its response must be known. Each ARC-1 microphone's frequency response is measured precisely and this data is used to create your microphone calibration files.

- Your computer must be running Windows XP or Vista and have one 9-pin serial port (for connecting the processor) and one USB port (for connecting the mic), **or** one USB port and one card slot and a serial card, **or** two USB ports and a USB to serial adapter. The latter is least preferred.

  RS-232E
  STRAIGHT CABLE

  If using a USB to serial adapter to connect the processor:

  1. It must be one that supports two stop bits – check with adapter manufacturer.

  2. Check the adapter manufacturer's website for the latest driver. If a message warns that the driver is not Windows-certified as it's about to be installed, do not use the adapter. Some "budget" adapters load bad data into the processor, possibly causing its operation to freeze.

  3. The virtual port must be assigned to COM1-COM6. If the processor software installer cannot locate the processor, use your adapter's port manager to check the setting.

- If you are using a laptop computer, check its power settings and battery meter to ensure that procedures will not be interrupted.

- If the room contains large objects that won't be present during the system's normal use, move them out so ARC doesn't pick up reflections that won't be present during normal use.

- While taking measurements it would be best to keep pets and younger or talkative family members out of hearing range. The measurements reject continuous background noise such as fans but if a sudden noise is made ARC will indicate that re-measurement is required.

- ARC bypasses Center Channel EQ, Room Resonance Filter, and Boundary Gain Compensation.

- Two configurations may be saved – one under Movie bass management and the other under Music.

Additional instructions for Mac computer use:
An Intel-based Mac with Bootcamp is required (ARC does not work with Parallels). To install Bootcamp:

- Do a Spotlight search for Bootcamp.

- Follow installation instructions to the letter – this involves partitioning the hard drive.

- After Bootcamp is installed, hold the Option key during bootup to display the two operating system options and select Windows.

ARC software installation:
Play the ARC CD in your computer's CD or DVD drive. Instructions will appear on your screen. If your computer does not allow a CD to auto-run then double-click on the My Computer icon that's on Desktop, select the drive that the CD is in to view its contents, and double-click on setup.exe.

The installation will put several files into an Anthem folder on your computer and create shortcuts on your Start Menu and Desktop. Two files begin with your processor's serial number. Examples: 123456_100002.cal and 123456_100002Anthem.file.

> **Custom installers:** To set up multiple systems using one computer, copy the two serialized files from each ARC CD to this directory after ARC is installed:
>
> My Computer, Local Disk C:\Program Files\Anthem\AnthemRoomCorrection

Microphone stand assembly:
Screw the telescoping tube into its base and the microphone clip onto the tube. Position the clip vertically. Connect the USB microphone cable to the microphone and slide the microphone into the clip.

Microphone positioning:
During measurement the microphone must point straight up. The microphone's height is critical to proper measurement and should be at ear level when seated.

Ideally, the front speakers' high-frequency drivers should be at approximately the same height as the listener's ears but if they aren't and the result sounds dull or bright, microphone height will have to be adjusted and measurements repeated.

To adjust the length of the telescoping tube, first loosen its clamp by rotating it counterclockwise.

Five listening area positions are normally measured but this number can be increased up to ten. The first must be at or just in front of the central seating position. This is also used to set Speaker Calibration levels. Positions 2 and 3 should be symmetric to the left and the right of the center line, and the same applies to the remaining positions. If your room has less than five seating positions, measurements must still be taken from five positions at least 2 feet (70 cm) apart to ensure optimal sound.

Measurement:

- Connect the microphone and the processor to the computer.

- Set the microphone in the first position. Don't stand near the microphone while sweep tones are playing otherwise reflections from your body may cause bad measurements.

- Run Anthem Room Correction by selecting it from the Start Menu or double-clicking the Desktop shortcut and select Standard mode. The program will guide you through the remaining steps and at the end will load the correction data to your processor. The process takes about 20 minutes depending on the number of measurements.

- Once the ARC program is finished, you can disconnect the computer. Turn on the processor and set "Room EQ:" On/Off in the Source Setup menu according to each source. If you made measurements for a Music configuration, assign Bass Manager accordingly.

- Save your settings in the Save / Load Settings menu. Note that changing the Sub crossover in the Bass Management menu affects only Room EQ "Off" sources.

Advanced:

A file created in Standard mode can be opened in Advanced mode to change correction range and room gain. To do this, change Targets then click on Calculate, then Upload.

> Since rooms and systems vary the only advice that Anthem technical support can provide without being at your house to hear your system is to use the auto-detected settings. The alternative is trial and error.

To change the amount of room gain, the Force checkbox has to be checked for the manually entered change in dB to take effect once clicking on Calculate. Auto-detected room gain will be at or near 0 dB if bass absorbers are used or the in-room response of the speakers shows no such gain.

To restore auto-detected settings, click on Auto Detect then Calculate.

Clicking on Erase uploads flat parameters.

> **Can one set of measurements be used across Movie and Music speaker configurations but with different settings applied? Can the subwoofer be disabled only in the Music configuration?**
>
> The answer to both questions is yes.
>
> - When measuring (Standard or Advanced), set the Music configuration to be Same As Movie.
>
> - In the Advanced mode Targets panel change settings as desired.
>
> - To omit the subwoofer, change its frequency to No Speaker by making it lower than 25 Hz. This can be done with the scroll arrow or by removing the frequency with the cursor and Backspace key on the computer's keyboard. Removing the center or surround speakers is not necessary for listening to 2-channel sources in stereo – if a surround mode is not selected (section 4.8), sound will not come from the center and surround speakers.

Updating ARC:

Check www.anthemAV.com periodically for ARC software updates. The download contains revision history, which may also indicate that the processor requires an update for the ARC version to work correctly.

If a newer version is posted and you would like to use it, check your current version:

- Run Anthem Room Correction in Advanced mode.

- Click on Help then click on About. The version number will be displayed.

Proceed only if your version is not the latest:

- Download the latest software from our web site to Desktop.

- When download is complete, right-click on the downloaded .zip file and extract it to Desktop.

- Open the extracted folder and double click on setup. Software installation instructions will appear on your screen. **If you are installing ARC on the computer for the first time, copy your two serialized files from your software CD to the extracted folder on Desktop before double-clicking on setup.** This way they will be added to Program Files as the software is installed.

- When installation is complete, you can delete the downloaded file and the extracted folder.

To use a measurement made with a previous version with a newer version that has changes in processing, open it in Advanced mode, click on Calculate then Upload.

4. OPERATION

4.1   POWER ON/OFF

The processor comes on at the volume setting in the Volumes setup menu. **The power amplifier should be turned on last and off first to prevent "popping" when upstream components are turned on and off.**

Front Panel – Main on

- Press **MAIN** in the POWER or the PATH group. Alternatively, if ZONE2 and ZONE3 are off, press any **SOURCE** button, FM • AM preset, or **TUNE**.
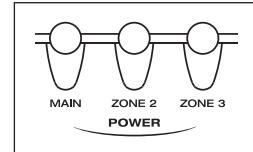
Front Panel – Zone on

- Press **ZONE2** or **ZONE3** in the POWER or PATH group.
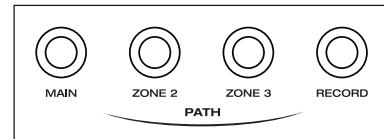
Front Panel – Main or a Zone off

- Press **MAIN** or **ZONE2** or **ZONE3** in the POWER group.

Remote Control – Main or a Zone on

- Make sure the appropriate control mode is set (**MAIN**, **Z2**, or **Z3**) then press **POWER**.

Remote Control – Main or a Zone off

- Make sure the appropriate control mode is set then press **OFF**.

4.2   PATH SELECTION

Path routes sources to the MAIN, ZONE2, ZONE3, or RECORD outputs.

- **MAIN:** Routes sources to your main listening/viewing room, with outputs for 7.1-channel audio and the main display.

- **ZONE2** and **ZONE3:** Routes sources to other rooms in your home. The source selection can be the same as or different from the source selected in other paths. ZONE2 and ZONE3 each have outputs for a TV and 2-channel audio. **To listen to a source that is not connected via L/R analog audio, you must copy it from MAIN (see section 4.3).**

- **RECORD:** Except when prevented by copy protection, allows you to record sources independently of what is selected in other paths. Composite and S-Video, and fixed-level analog audio outputs are available for two recorders. In addition, the two coaxial digital audio outputs DIGITAL1 can put out the audio of any digital source, or convert an analog source to digital. DIGITAL2 can put out the same signal as DIGITAL1, or any of the sources set to Digital. To use conversion or downmixing, the source must be copied from MAIN – see section 4.3. **Analog audio RECORD output has a signal only if L/R analog audio is connected or when MAIN is copied.**

  Remote control – the **REC** PATH key works only when in MAIN control mode.

The displayed path returns to MAIN a few seconds after an adjustment is made in ZONE2, ZONE3, RECORD, or HEADPHONE*. This is designed to prevent accidents. For example, if someone in the MAIN room wants to turn up the volume there, and the path is in ZONE2, the volume would increase in ZONE2, not MAIN. Since the person adjusting the volume doesn't hear the change, chances are that he or she would keep turning up the volume in ZONE2, unaware of what's happening there.

* Except when MAIN is off or HEADPHONE is set to mute the MAIN speakers in the Volumes setup menu.

4.3   MANUALLY COPYING THE MAIN PATH TO ZONE2, ZONE3, OR RECORD

When Main is copied to another path, the source selected in MAIN is directed to the other path.

> If a source component's audio is connected to the processor using digital connection only, the Copy function is the only way to deliver the sound to another path.

Front Panel
Press **MAIN** simultaneously with **ZONE2**, **ZONE3**, or **REC**. Use MAIN to select the source.

Remote Control
Make sure the appropriate control mode is set, or **REC** path is selected, then press **COPY**.

When MAIN is copied, the display for the other paths reads "–MAIN–> ZONE2" (or ZONE3 or REC), along with the information normally displayed. **Copy can also be set permanently in the source setup menu.**

Downmixing to 2-Channel:
The center, surround, and rear channels can be mixed into the left and right channels for the processor's non-MAIN outputs. This can be done by the source or the processor:

- **Processor downmix:** The processor downmixes multichannel sources into 2.0 when you copy MAIN to another path. This does not apply to HDMI inputs. REC output is PCM.

- **Source downmix:** If the source's left/right analog outputs are connected to the processor, the source's downmix can be used for ZONE2, ZONE3, TAPE, and VCR outputs without having to copy MAIN. Note that DVD players may not downmix DTS material.

4.4   SOURCE SELECTION

After making sure that you are in the appropriate path (front panel) or appropriate control mode is set (remote control), select a source.
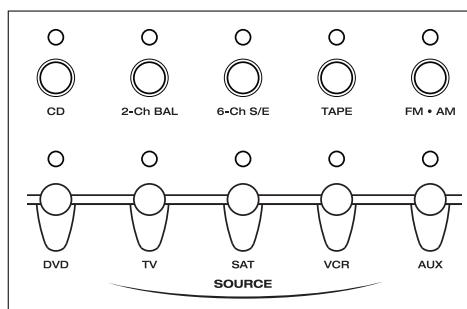
6-Channel Analog Audio Input:
The 6-Ch audio can be routed to ZONE2, ZONE3, and RECORD outputs as long as Copy mode, which creates the stereo down-mix, is used.

Source Seek (remote control only)**:**
The SOURCE SEEK ◄◄ ►► keys detect the previous/next active source, while the ► key advances one source at a time.

4.4.1 FM•AM TUNER

The processor has an FM•AM tuner. The selected station is common to all paths.

Manual Tuning:
After selecting the desired band by pressing **FM•AM**, use the ▲ ▼ buttons (remote control) or press **TUNE** and rotate the Master Control Knob (front panel).

Automatic Tuning:
To find the next station, press ◀ **SEEK** or **SEEK** ▶ . To scan and listen to all available stations for a few seconds, press and hold ◀ **SEEK** or **SEEK** ▶ for about a second. The ◀ **Sk** or **Sk** ▶ indicator on the display will change to ◀ **Prv** or **Nxt** ▶ . To stop scanning, press one of the ◀ **SEEK** ▶ buttons to return to Seek mode, or press **TUNE** to tune manually (front panel only). Press **TUNE** a second time to restore the regular functions and display (the TUNE function does not time out).

Direct Tuning (remote control only)**:**
A station's frequency can be entered as a four-digit number. For example, to tune into 98.3 FM, press and hold **SELECT** until the display shows "<blank>0.0" in the lower left corner, then press **0**, **9**, **8**, **3**.

Presets:
18 FM and 6 AM stations can be stored. The presets are divided into four banks of six. By repeatedly pressing **FM•AM**, the display will show that you are cycling through FM1, FM2, FM3, and AM. Once you have selected the desired bank, you can store the currently tuned radio station by pressing and holding one of the six preset keys (**1** through **6**) for about a second. You can even do this while scanning for stations. The lower line of the display briefly flashes once the station is stored. To skip a preset, set it to 87.5 FM or 530 AM.
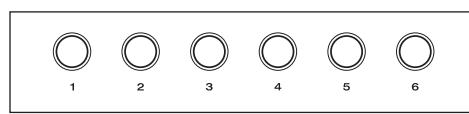
To recall a preset, select the bank that it is in, then press the respective preset key. From the remote control, you can also use the **CH+** and **CH−** keys to run through all FM or AM presets.

ST / HiB / M (front panel only)**:**
If FM reception is weak, switching a station out of stereo can reduce or eliminate unwanted noise. Press **ST / HiB / M** repeatedly to cycle through Stereo, Hi-Blend, or Mono. Hi-Blend offers an alternative to Mono, offering decreased noise without the complete loss of stereo – it decreases hiss and noise by reducing some stereo separation only at higher frequencies. The setting is memorized for each preset.
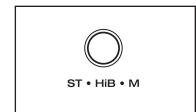
4.4.2 SIMULCAST

Simulcast allows you to select one video source and a different audio source. For example, you could view a sports event on TV while listening to your favorite FM•AM station. Simulcast is available for all paths.

Press and hold the desired video source button for 2 seconds. The display shows "Video Source" and the video source in the top line, and "SELECT AUDIO SOURCE" in the bottom line – while this is on the display, press another source button to select the audio source. When the regular display returns, the source LED indicates the video source, and the display shows the audio source next to a "+". **HDMI audio cannot be used in Simulcast mode.**

To exit from Simulcast mode, press any source button – both the audio and video will switch to this selection.

4.5   VOLUME CONTROL

Front Panel:

MAIN – Adjust using the Master Control Knob. If levels have been calibrated according to setup instructions, set volume to 0 dB for the playback level at which the film was presented in theaters.

ZONE2 or **ZONE3** – Press ZONE2 or ZONE3, then adjust.

HEADPHONE – While in MAIN, press FRONTS twice, then adjust.

Remote Control:

After the appropriate control mode is set, use the **VOL+** and **VOL–** keys.
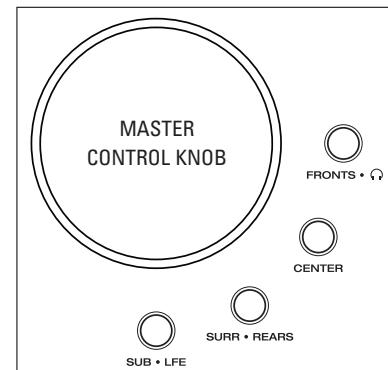
Mute:
When MUTE is pressed, the audio of the selected path is silenced or reduced in level according to the Volumes setup menu. To un-mute, press MUTE again or adjust volume.

Dialog Normalization:
Dolby Digital program material contains non-audio data which the processor uses to adjust playback level, when necessary, so volume variations between movies and programs are eliminated. Without Dialog Normalization, movies not encoded at standardized levels for the dialog could lose dynamic range – higher levels can result in distorted peaks, lower levels can result in quiet sounds disappearing into the noise floor. Dialog Normalization also ensures that Dynamics control (section 4.8.10) works as intended.

If the display reads "Dial Norm Offset -4.0 dB" at the start of a movie, it is indicating that the encoded level is higher than standard by 4.0 dB – the playback level of all channels is then automatically reduced by 4 dB.

4.6   LEVEL TRIM

If a speaker group occasionally sounds too loud or soft, its level can be adjusted on the fly. Settings are memorized according to input format. Adjust using the Master Control Knob or ▲ ▼ on the remote:

- **Fronts:** Press FRONT•HPH then adjust (this changes left, center, and right).
- **Center:** Press CENTER then adjust.
- **Surrounds:** Press SUR•REAR then adjust.
- **Rears:** Press SUR•REAR twice then adjust.
- **Subwoofer:** Press SUB•LFE then adjust.
- **LFE:** Press SUB•LFE twice then adjust – this reduces LFE level without affecting bass from other channels. Early DTS material may need LFE reduced to -10 dB.

To reset all to 0 dB, see section 3.13.

When listening in stereo with front speakers set to large, the subwoofer must be set to Super in the speaker configuration if you want it to play.

4.7 BASS / TREBLE / BALANCE

To change the Bass, Treble, or Balance of:

- **MAIN – All Speakers Simultaneously:** Press BASS, TREBLE, or BALANCE, then adjust.

- **MAIN – Fronts Only:** Press FRONTS, press BASS, TREBLE, or BALANCE, then adjust.

- **MAIN – Center Only:** Press CENTER, press BASS or TREBLE, then adjust.

- **MAIN – Surrounds Only:** Press SURR•REARS, press BASS, TREBLE, or BALANCE, then adjust.

- **MAIN – Rears Only:** Press SURR•REARS twice, press BASS, TREBLE, or BALANCE, then adjust.

- **ZONE2** or **ZONE3:** Press ZONE2 or ZONE3, press BASS, TREBLE, or BALANCE, then adjust.

- **HEADPHONE:** Press FRONTS•🎧 twice, press BASS, TREBLE, or BALANCE, then adjust.
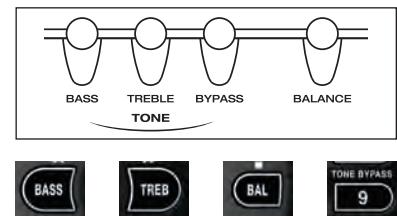
Pressing BYPASS disables the adjustment. Bass/Treble does not apply to sources set to Anlg-Dir.

4.8 SURROUND MODES

A surround mode is signal processing that enhances source material. Surround modes fall in two main categories – those that apply to **stereo** sources and those that apply to **multichannel** sources.

By default, all surround speakers are used except with 1.0-channel sources – after finding your preferences, change presets in the mode presets menu.
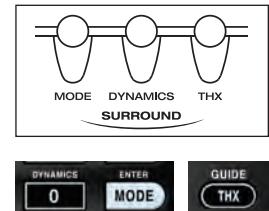
Surround modes do not apply to sources set to Anlg-Dir.

With analog input there is no way for a processor to detect whether the source material was encoded.

Stereo Sources:
This includes analog stereo, digital PCM stereo, and Dolby Digital 2.0. Surround modes can be applied to provide up to 7.1 channels of output. They are described later in this section. Each source memorizes its mode setting, so you can, for example, set TV to AnthemLogic-Cinema and CD to AnthemLogic-Music.

Multichannel Sources:
The processor engages decoding according to the format that you select on each DVD.

Once the processor's display shows the format, you can select additional processing described throughout this section. Your selections are memorized by format and by source.

4.8.1   AnthemLogic™   ANTHEM LOGIC   MUSIC / CINEMA

These are proprietary surround modes developed by Anthem that offer outstanding surround performance and can be applied to any 2-channel source:

AnthemLogic-Music™

AnthemLogic-Music™ enhances the stereo listening experience without detracting from the stereo soundstage. Through extensive listening tests a very effective design was developed. This is a minimalist design that uses no echo or reverberation effects which could negatively affect the purity of the sound.
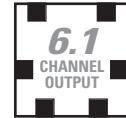
6.1 CHANNEL OUTPUT

Up to 6.1 channels of output are provided. AnthemLogic-Music™ does not utilize the center channel to ensure that the purity of the stereo music soundstage will in no way be compromised when you're sitting in the "sweet spot" and listening to your favorite stereo recordings.

AnthemLogic-Music™ is very effective in creating an expansive musical soundstage that helps to remove the barrier of the listening room in a non-intrusive and compelling way. This is the factory default 2-channel surround mode for CD, TAPE, and FM•AM.

AnthemLogic-Cinema™

AnthemLogic-Cinema™ provides a large, enveloping and dynamic movie listening experience that makes 2-channel movies sound more like what is experienced in a state-of-the art movie theater. Again through extensive listening tests a very effective design was developed. This is also a minimalist design that avoids the use of echo effects, which could otherwise negatively affect the purity of the sound.
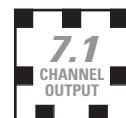
7.1 CHANNEL OUTPUT

Up to 7.1 channels of output, depending on your speaker configuration. AnthemLogic-Cinema™ provides the missing link that lets you experience full impact home theater sound from any 2-channel stereo analog source such as VCR or TV, or any Dolby Digital 2-channel source, such as DVD or satellite. This is the factory default 2-channel surround mode for all sources except CD, TAPE, and FM•AM.

4.8.2   DOLBY DIGITAL 2.0   DOLBY DIGITAL EX   PRO LOGIC IIx

Dolby Digital 2.0 soundtracks with surround encoding contain a flag that is normally used to activate Pro Logic IIx Movie mode. The processor can be set to use this flag or to ignore it.

To find out if the Dolby Digital 2.0 material being played has the surround flag, press **MODE**. If flagged, the first line of the display says "DOLBY D 2.0 SUR AUTO" and if not flagged, it says "MODE FOR 2 CH INPUT".

The modes in the next section may be selected separately for flagged and unflagged stereo sources.

Single-channel soundtracks can be encoded two ways – using the center channel or with the same signal into the left/right channels. The mode changes to Mono if the soundtrack uses only the center channel – you can switch it to Mono-Academy or All Channel Mono afterwards.

4.8.3 SURROUND MODES FOR 2.0-CHANNEL SOURCES

Number of output channels is indicated. THX must be Off for all modes to be available. Press **MODE** then use the Master Control Knob or ▲ ▼ (up/down) on the remote control to cycle through selections:

Stereo	No surround mode is applied.
AnthemLogic-Music	**6.1** – One of Anthem's proprietary surround modes, designed to expand the soundstage of stereo music in a very natural way without losing soundstage integrity or image focus. **The center channel is not used.**
AnthemLogic-Cinema	**7.1** – Another proprietary mode from Anthem, designed to provide the impact of a large theater experience from 2-channel movies and TV programs.
Pro Logic IIx Music	**7.1** – Can be used with stereo music. Three parameters are adjustable by pressing the **MODE** button one, two, or three times while in Pro Logic IIx Music and rotating the Master Control Knob or using ▲ ▼ (up/down) on the remote: **Center Width** is adjustable from 0 to 7. Setting this to 0 places all center sound in the center speaker while 7 places it equally in the left and right channels. **Dimension** has seven steps of balance adjustment between the surround and center channels. **Panorama** when "On" extends the front stereo image to include the surround channels. Effective for recordings with strong left or right channel elements.
Pro Logic IIx Movie	**7.1** – Dolby Surround decoder for 2-channel movies and TV programs.
Pro Logic IIx Matrix	**7.1** – A matrix decoder that does not steer the image from one speaker to another.
Pro Logic IIx Game	**7.1** – Bass from surround effects in video games is optimized for visceral impact.
Dolby Pro Logic	**4.1** – In case there's a desire to hear it "as it used to be" (surrounds are mono).
Neo:6 Music	**6.1** – Can be used with stereo music. The center image is adjustable by pressing **MODE** while in Neo:6 Music and rotating the Master Control Knob or using ▲ ▼ (up/down) on the remote: **Center Image** is adjustable from 0 to 5 – an increase makes the center channel more prominent.
Neo:6 Cinema	**6.1** – A matrix decoder that can be used with any matrix-encoded movie. Separation is created by allowing sounds to be placed at different points in the sound field.
All Channel Stereo	**7.1** – The left and right channels are also sent to the surround and rear channels, while the center channel and subwoofer receive a combination of both. Some processing is used to retain image clarity. Useful for playing music at parties so it can be heard with equal loudness in all parts of the room.
All Channel Mono	**7.1** – Combines the left and right channels and sends the signal to all speakers.
Mono	**1.1** – Combines the left and right channels and sends them to the center speaker.
Mono-Academy	**1.1** – Gives a presentation closer to the original on movies made from the 1930s to the 1960s, which relied on high-frequency rolloff for sound balance and to mask noise. Also useful with DVDs of TV shows if high-pitched noise leaked from a CRT (cathode ray tube) monitor to the recording during production.

Why can't I select a surround mode when playing a multichannel source?

1. If it's not PCM and its sampling rate higher than 96 kHz, surround processing may not be applicable.

2. If you are using less than 7.1 speakers and the speaker configuration menu is set correctly, modes that require more speakers cannot be selected. Except for AnthemLogic-Music, outputs are:

5.1 – L-Front, Center, R-Front, R-Surround, L-Surround, Subwoofer
6.1 – L-Front, Center, R-Front, R-Surround, L-Surround, **Rear*,** Subwoofer
7.1 – L-Front, Center, R-Front, R-Surround, L-Surround, **R-Rear, L-Rear,** Subwoofer

* If two rear speakers are used, rear channel information goes to both.

4.8.4   DOLBY DIGITAL

Lossless Dolby TrueHD and various compressed formats including Dolby Digital Plus can be played. The number of input channels ranges up to 7.1.

Dolby Digital EX or Pro Logic IIx can be used to extract rear channels from the surrounds on DVDs encoded in Dolby Digital Surround EX. Dolby Digital EX creates a mono rear signal whereas with Pro Logic IIx the rear channels play a stereo signal. Either of these modes can be applied to any 5.1-channel source.

A list of movies encoded in Dolby Digital Surround EX can be found on the Dolby web site at www.dolby.com and on the THX web site at www.thx.com. A flag to engage Dolby Digital EX or Pro Logic IIx is usually contained in newer titles. Press **MODE** when a movie starts playing and use the Master Control Knob to select the mode that sounds best – the display says "DOLBY D 5.1 INPUT" if the soundtrack is unflagged, and "DOLBY D EX AUTO" if it is flagged.

4.8.5   DTS

Lossless DTS-HD Master Audio and various compressed formats such as DTS-HD High Resolution Audio, DTS 96/24, and DTS-ES can be played. Number of input channels ranges up to 7.1.

There are two ways that a rear channel is carried in DTS-ES:

- **Matrix** – DTS-ES Matrix sources have mono rear channel matrixed in the left and right surround channels. When played, Neo:6 is used to extract it. Neo:6 can be applied to any other 5.1-channel material – when a movie starts playing, press **MODE** and use the Master Control Knob to select.

- **Discrete** – DTS-ES Discrete sources contain 6.1 channels with an independent rear channel in the space that 5.1 channels normally occupy.

Why isn't my processor detecting the sound format that I'm trying to play?
A connection carries **one** format at a time and the processor plays what it gets. Make sure the source's digital audio output is set to leave Dolby Digital and DTS unchanged (Bitstream) in its setup menu. You must also select the soundtrack that you want to hear in each disc's audio or language setup before playing the movie, or while the movie is playing by pressing AUDIO on the player's remote control.

4.8.6 THX

THX is an exclusive set of standards and technologies established by the world-renowned film production company Lucasfilm Ltd. THX grew from George Lucas' desire to make your experience of the film soundtrack, both in movie theaters and in your home theater, as faithful as possible to what the director intended. Movie soundtracks are mixed in special theaters called dubbing stages and are designed to be played in movie theaters with similar equipment and conditions. This soundtrack is often transferred to DVD without adjustments for home theater. THX engineers developed patented technologies to accurately translate the sound from the movie theater to the home, restoring proper tonal and spatial balance.

Each THX mode includes a combination of the following:

- **Re-Equalization** – Restores the correct tonal balance for home playback. A film soundtrack may sound bright when played in the home because film soundtracks are designed for large movie theaters where acoustic properties are different. To enable or disable Re-EQ press **THX** twice to display "THX RE-EQUALIZATION" then select On or Off with the Master Control Knob or ▲ ▼ (up/down) on the remote control. **Re-EQ is also applicable when THX is Off** – this can be useful where high-pitched noise leaked from a CRT monitor to the recording during production.

- **Timbre Matching** – The ear changes our perception of sound depending on the direction it's coming from. Movie theatres use an array of surround speakers resulting in surround information from many directions. In the home less surround speakers are used. Timbre Matching, which includes Re-EQ, changes surround information so its tonal characteristic resembles that of the front speakers. This ensures seamless panning between the front and surround speakers.

- **Adaptive Decorrelation** – In a movie theatre, a large number of surround speakers help create an enveloping surround sound experience, but in a home theatre there are usually only two speakers. Unless you are using properly positioned dipoles, surround speakers can sound like headphones that lack spaciousness and envelopment – they will also collapse into the closest speaker as you move away from the middle seating position. Adaptive Decorrelation senses the presence of identical surround channels (mono) and slightly changes one surround channel's time and phase relationship with respect to the other. This expands the listening position and creates – with only two speakers – the same spacious surround experience found in a movie theatre. Adaptive Decorrelation does not operate when the surround channels are different from one another.

- **ASA (Advanced Speaker Array)** – explained in section 3.4.

Summary of THX processing:
Re-EQ de-emphasizes treble. May be turned on or off at any time after pressing **THX** twice.
Timbre Matching matches the sound character of the surround channels to the front channels.
Adaptive Decorrelation restores spaciousness when the source has one surround channel.
ASA provides a wide rear soundstage.

Depending on speaker configuration and input format, THX options are:

THX Cinema: When THX Cinema is selected, Dolby Pro Logic IIx Movie is engaged. Alternatively, Dolby Pro Logic or DTS Neo:6 Cinema may be selected. Other surround modes do not apply and do not appear when pressing MODE.

THX Ultra2 Cinema: THX Ultra2 Cinema mode plays 5.1-channel movies using 7.1 speakers giving you the best possible THX movie watching experience with 5.1-channel sources. With this mode ASA processing blends the surround speakers and rear speakers providing the optimal mix of ambient and directional surround sounds.

THX MusicMode: THX MusicMode is applicable to multichannel music. With this mode THX ASA processing provides a wide stable rear soundstage.

THX Games Mode: Game audio is mixed and monitored in a different environment than that of music and movies. The interactive nature of the audio requires a playback system which can provide 360 degree panning while preserving the ambient nature of background sound elements. When playing 5.1-channel games, THX Games Mode may be engaged. Suitable sources are Dolby Digital 5.1 and DTS 5.1 game sources. If THX Games Mode is engaged with 2.0 input, the source is first converted to 5.1 via Pro Logic IIx Game mode.

THX Surround EX: THX Surround EX – Dolby Digital Surround EX is a joint development of Dolby Laboratories and the THX division of Lucasfilm Ltd.

In a movie theater, film soundtracks encoded with Dolby Digital Surround EX are able to reproduce an extra channel added during the mixing of the program. This channel (called Surround Back but named Rear in the processor), places sounds behind the listener. This additional channel provides more detailed imaging behind the listener bringing more depth, spacious ambience, and sound localization.

Movies created using Dolby Digital Surround EX may exhibit wording to that effect on DVD packaging. A list of movies created using this technology can be found on the Dolby web site at www.dolby.com and list of the DVD titles can be found on the THX web site at www.thx.com.

Bearing the THX Surround EX logo, the processor will faithfully reproduce this technology in the home when in THX Surround EX mode.

THX Surround EX can also be used with 5.1-channel sources not encoded with Dolby Digital Surround EX. Rear channel quality will depend on the source.

In accordance with THX, Bass/Treble, Level Trim, and Balance adjustments are **reset to 0 dB** when a THX mode is selected, after which you can make adjustments with THX engaged. When THX is Off, previous settings except Balance are restored. Due to the nature of bitstreams, adjustments made with THX engaged will be reset to 0 dB if the source is paused for longer than 3 seconds.

4.8.7   Mode and THX options for 2.0-channel sources

Select using Master Control Knob or ▲ ▼ keys on remote control. To make all modes available, turn THX off.

Press MODE
presets are in setup menu → **Stereo (2-Ch)**

AnthemLogic-Music (6.1)

AnthemLogic-Cinema (7.1) → ANTHEM LOGIC MUSIC / CINEMA

Dolby PLIIx Music (7.1) →

Press Mode Once → **Center Width:** Adjust using MCK (or N/S keys)
Increasing # decreases center level and places it in L/R

Press Mode Twice → **Dimension:** Adjust using MCK (or N/S keys)
Front-to-back balance – Center (C----+----S) Surrounds

Press Mode 3 Times → **Panorama: On** using MCK (or N/S keys)
Extends the front stereo image to include surrounds

If THX Cinema is selected, mode changes to PLIIx Movie. → **Dolby PLIIx Movie (7.1)** →

THX

Press THX → **THX Cinema (5.1)**
Re-EQ, Timbre Matching

Dolby PLIIx Matrix (7.1)

If THX Games is selected, mode changes to PLIIx Game. → **Dolby PLIIx Game (7.1)** → **THX Games Mode (7.1)**
Timbre Matching, ASA-Game

Press THX Twice → **RE-EQ: On/Off** using MCK (or N/S keys)

THX

Dolby Pro Logic (4.1) → **Press THX** → **THX Cinema (5.1)**
Re-EQ, Timbre Matching, Adaptive Decorrelation

Press THX Twice → **RE-EQ: On/Off** using MCK (or N/S keys)

DTS Neo:6 Music (6.1) → **Press Mode** → **Center Image:** Adjust using MCK (or N/S keys)
Increasing the number makes center more prominent

THX

DTS Neo:6 Cinema (6.1) → **Press THX** → **THX Cinema (6.1)**
Re-EQ, Timbre Matching

All Channel Stereo (7.1)

Press THX Twice → **RE-EQ: On/Off** using MCK (or N/S keys)

All Channel Mono (7.1)

Mono (1.1)

Mono-Academy (1.1)

Selections are memorized separately for Dolby Digital Surround 2.0-flagged vs unflagged sources. Mono, All Channel Mono, and Mono-Academy are the options for Dolby Digital 1.0-channel sources.

4. OPERATION continued …

4.8.8 Mode and THX options for 5.1-channel Dolby sources and 6-Ch S/E

Select using Master Control Knob or ▲ ▼ keys on remote control. To make all modes available, turn THX off.

Press MODE presets are in setup menu	**None (5.1)** → **THX** / Press THX →	**THX Cinema (5.1)** Re-EQ, Timbre Matching, Adp.Decorrelation
		THX Ultra2 Cinema (7.1) Re-EQ, Timbre, Adaptive Decorrelation, ASA-Cinema
		THX MusicMode (7.1) Timbre Matching, Adaptive Decorrelation, ASA-Music
		THX Games Mode (7.1) Timbre Matching, ASA-Game
		THX Surround EX (6.1) Re-EQ, Timbre Matching
	Press THX Twice →	**RE-EQ: On/Off** using MCK (or N/S keys)

Dolby PLIIx Movie (7.1) → **THX** / Press THX →	**THX Cinema (7.1)** Re-EQ, Timbre Matching, Adaptive Decorrelation
Press THX Twice →	**RE-EQ: On/Off** using MCK (or N/S keys)

Dolby PLIIx Music (7.1)

If THX Sur EX is selected, mode changes to Dolby D EX.

Dolby Digital EX (6.1) → **THX** / Press THX →	**THX Surround EX (7.1)** Re-EQ, Timbre Matching
Press THX Twice →	**RE-EQ: On/Off** using MCK (or N/S keys)

DTS Neo:6 (6.1) → **THX** / Press THX →	**THX Cinema (6.1)** Re-EQ, Timbre Matching
Press THX Twice →	**RE-EQ: On/Off** using MCK (or N/S keys)

Selections are memorized separately for Dolby Digital Surround EX-flagged vs unflagged material. THX Cinema is the only option for 7.1-channel Dolby TrueHD (Re-EQ, Timbre Matching).

4.8.9   Mode and THX options for 5.1-channel DTS sources

Select using Master Control Knob or ▲ ▼ keys on remote control. To make all modes available, turn THX off.

THX

Press MODE presets are in setup menu	→ **None (5.1)** → Press THX →	**THX Cinema (5.1)** Re-EQ, Timbre Matching, Adaptive Decorrelation
		THX Ultra2 Cinema (7.1) Re-EQ, Timbre, Adaptive Decorrelation, ASA-Cinema
		THX MusicMode (7.1) Timbre Matching, Adaptive Decorrelation, ASA-Music
		THX Games Mode (7.1) Timbre Matching, ASA-Game
	Press THX Twice →	**RE-EQ: On/Off** using MCK (or N/S keys)

THX

Dolby PLIIx Movie (7.1) → Press THX →	**THX Cinema (7.1)** Re-EQ, Timbre Matching, Adaptive Decorrelation
	Press THX Twice →	**RE-EQ: On/Off** using MCK (or N/S keys)

Dolby PLIIx Music (7.1)

Dolby Digital EX (6.1)

THX

DTS Neo:6 (6.1) → Press THX →	**THX Cinema (6.1)** Re-EQ, Timbre Matching
	Press THX Twice →	**RE-EQ: On/Off** using MCK (or N/S keys)

Selections are memorized separately for DTS vs DTS-ES Matrix. THX Cinema is the only option for 6.1- and 7.1-channel sources (Re-EQ, Timbre Matching).

4.8.10 DYNAMICS

DYNAMICS allows you to control the difference between the softest and loudest passages on multichannel Dolby Digital and DTS soundtracks that contain dynamic scaling cues. At least 5.1 speakers must be used. Use the Master Control Knob or ▲ ▼ keys on the remote control to select:

Reduced: Allows the quieter parts to be heard more easily, and works by raising the level of quieter sounds and/or reducing the level of louder ones according to cues in the soundtrack.

Late Night: Further reduces the softest-to-loudest difference.

Reduced and Late Night are reset to Normal when Main power is turned off.
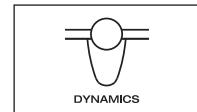
> Sources often have dynamic range controls as well. Be sure to disable them to get the most from the processor's dynamics control. In some cases the setting names in sources are confusing because "Extended" can mean dynamics are left alone while "Normal" can mean they're reduced. Check source operating manuals to find what their settings mean and under what conditions they apply.

4.9 LIP-SYNC DELAY (remote control only)

To adjust lip-sync while playing a video source instead of viewing the setup menu, press and hold the **DISPLAY** key until the display shows "LIP-SYNC DELAY", then use the ◄ ► keys to move from digit to digit and the ▲ ▼ keys to adjust.

4.10 DISPLAY BRIGHTNESS (front panel only)

To change the brightness of the front panel display and LED indicators, press **DISPLAY** and use the Master Control Knob to select Maximum, High, Medium, Low, or Off.
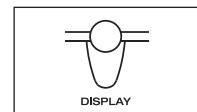
4.11 VIDEO SOURCE ADJUSTMENT

Sources sometimes contain anomalies. HD inputs may have the wrong color space, while S-Video and component video signals may need adjustment before being converted to digital, for HDMI output. The processor allows **separate adjustment for each source**.

Anthem's video processor allows **separate adjustment for each source**. Adjust **after** setting up menu 1 and your display. Upon entering the Video Processing Menu, the on-screen display appears together with the video source so that you can see changes to the picture as you make them in the menu.

The outcome of the settings in the Video Processing Menu depends on settings in your source components, **so set them up first,** for example, set your DVD player's output to 16:9.

HOW TO ENTER THE VIDEO PROCESSING MENU

For three seconds, press and hold ON SCREEN (7) on the remote or DISPLAY on the front panel. The menu is displayed from MAIN outputs according to section 3.

HOW TO NAVIGATE IN THE VIDEO PROCESSING MENU

- Use the ◀ ▶ and ▲ ▼ keys to select an item.
- Press **SELECT** to change a setting. Items with a right arrow ▶ lead to further selections once SELECT is pressed.
- Press **BACK** to return to previous item.
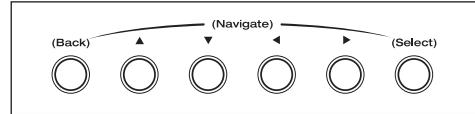
MAKING ADJUSTMENTS WHEN A SLIDER IS DISPLAYED

Use the ◀ ▶ keys. Use ▲ ▼ to go to the next slider if the menu has more than one.

HOW TO EXIT FROM THE VIDEO PROCESSING MENU

Press **BACK** as many times as necessary. Each time BACK is pressed the previous item or menu returns. The menu will exit if not used for 5 minutes to prevent a burned-in on-screen image.

PICTURE

The Picture menu provides video adjustments for each source. **Do not make adjustments in this menu if your display has not been calibrated** – see the Test Patterns section and return after calibrating your display.

PICTURE	CROP INPUT	SCALE OUT	OUTPUT	PATTERNS	INFO

Input Color Space	▶
Bright / Contrast / Color	▶
Film Mode	▶
Detail Enhancement	▶
Noise Reduction	▶
Chroma Bug Filter	▶
Video ADC	▶
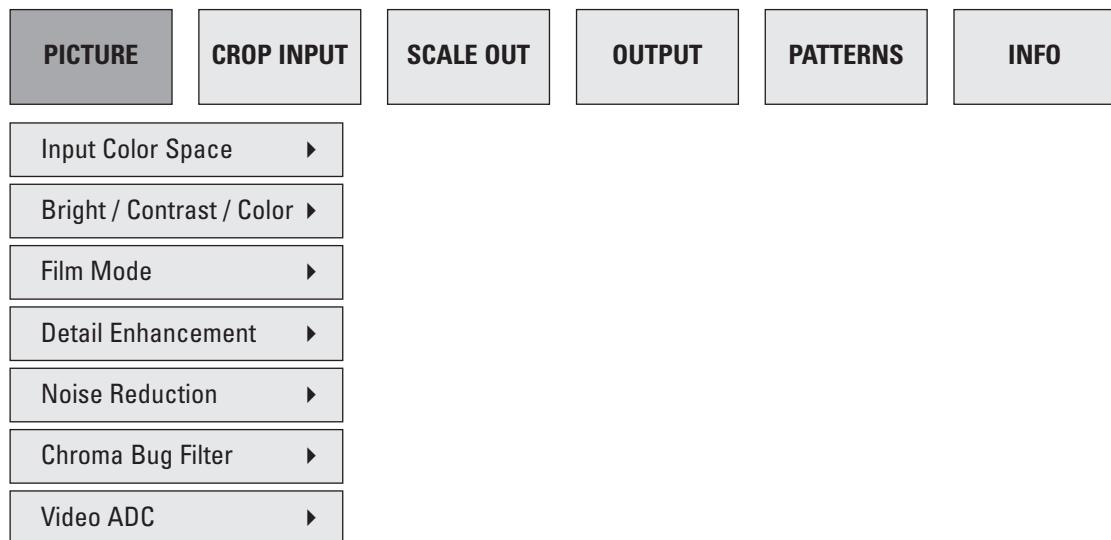
Input Color Space
For YCbCr input, the default is Auto, which switches between HD and SD color space according to whether input has HD or SD resolution. In case the source contains the wrong color space for its resolution, for example, a cable box that converts 480i channels to 1080i output without converting SD color space to HD causing some unnatural hues, the color space can be corrected by forcing the setting to SD or HD.

If the source is in RGB format instead of YCbCr, choose between Studio and Extended – detail in dark scenes can be used to find the correct setting. The default is Studio.

Brightness / Contrast / Color / Tint
If a source needs Brightness (black level), Contrast (white level), Color (saturation), or Tint (hue) adjustment, you can do it here. The default for each of these is 50. If the source component puts out RGB and output in menu1 is set to RGB, Color and Tint are not adjustable so that unnecessary color space conversion is avoided. If you need to adjust the image in such a case, set the source component to YCbCr output.

Film Mode
Did the source originate from film or from video? If from a video camera, which type? If it's a film source on TV, was a regular pattern of fields deleted to change the playing speed? Is it animation, and if so, according to which animation spec? Is it a mix of sources edited together? Are video characters being scrolled across a film source?

For a video processor to provide best image quality, it must detect the source's cadence, or pattern of field sequence, and deconstruct it accordingly. The Sigma Designs VXP processor can not only do that, it can do so even when the input is high-definition. Film Mode can be overridden by changing the setting from Auto to Off, but don't do it unless you need to.

Detail Enhancement
Digital processing is used to do what the name implies – experiment with the level adjustment and leave it where the picture looks best. The factory default is 0.

Noise Reduction

By treating parts of the picture selectively to avoid a soft overall image, this reduces or removes "block" and "mosquito" artifacts that appear in overcompressed video sources – adjust if necessary (default for each adjustment is 0). Block noise is characterized by square blocks momentarily blurring motion whereas mosquito noise is random-looking distortion near edges of objects in the picture. These artifacts are more likely to appear in digital broadcasts than with disc sources.

Chroma Bug Filter

A decode error in some older digital video sources appears as horizontal streaks over areas that are rich in color, especially red areas in cartoons and graphics. Turn correction On if you see such an artifact, but don't spend energy looking for it – your DVD player, depending on model, may have it taken care of.

Video ADC

S-Video and component video signals containing anomalies may need adjustment before being converted to digital. Video Input Gain (default: Auto) changes the white level and Video Input Offset (default: 50) changes the black level. Sampling Phase adjustment (default: 15) can be useful when video comes from a video DAC (e.g. computer video card) containing ringing edges due to improper filtering – adjust for minimal "ghost" imaging while using a static black and white picture with lots of detail and sharp edges.

For S-Video inputs, two more adjustments are available. Chroma Transient Improvement Level can fix blurred edges where two colors meet. Luma Digital Noise Reduction Level suppresses spikes in the signal which are usually noise. The default for both is 0 – experiment and leave where the picture looks best.

CROP INPUT

The Crop Input menu is where the image's frame is set. If there's anything outside of the image that you want to remove, this is the best place to do it, i.e. before the image is scaled, preventing unnecessary artifacts.

PICTURE	CROP INPUT	SCALE OUT	OUTPUT	PATTERNS	INFO

Auto Detect
16:9
4:3
Custom Setting ▶
Trim Edges: Off
Trim Edges: On ▶
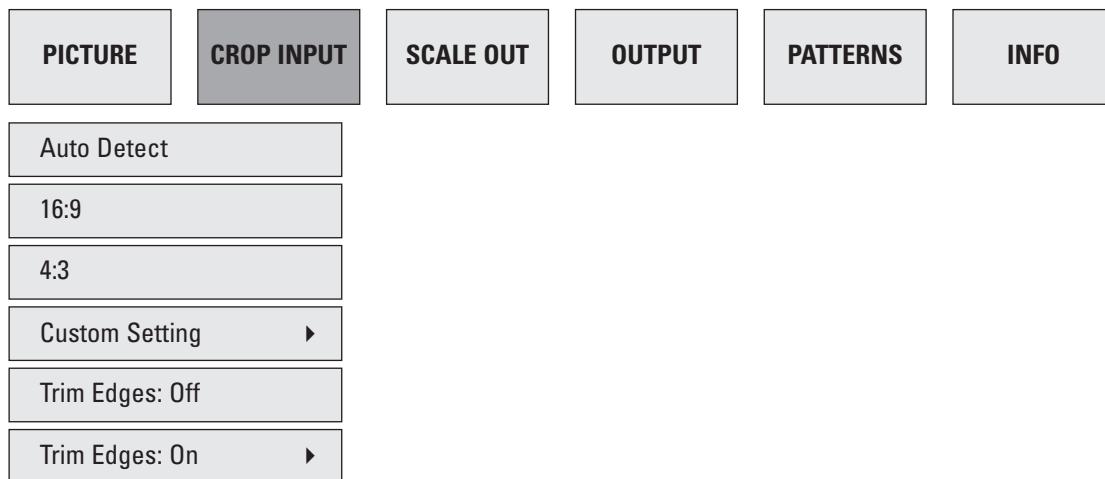
Input Aspect Ratio – Auto Detect, 16:9, 4:3

The default is Auto Detect. In this mode, a 4:3 input frame is assumed if the input is standard definition (480 or 576 lines), and a 16:9 input frame is assumed if the input is high definition (720p and higher). If a forced setting is needed, select the one that displays the picture correctly – most often, this means selecting 16:9 when the source is standard-definition letterboxed. The most common aspect ratios are:

1.33:1 (4:3)	**1.78:1** (16:9)	**2.4:1**
SDTV, classic movies	HDTV, widescreen movies	"Scope" movies, anamorphic projection
movies also 1.37:1	movies also 1.66:1, 1.85:1	also 2.20:1, 2.35:1, 2.55:1 and beyond

Custom

If the above settings aren't suitable, select Custom and adjust Horizontal Size, Vertical Size, Horizontal Position, and Vertical Position. **If using an anamorphic projection lens, set Vertical Size to 810** (even if output resolution in menu 1 isn't 1920x1080 – the relationship is maintained to make setup easy).

Since position can be adjusted after size is adjusted, this can also be the right choice for off-center sources but in this case be sure to adjust size proportionally – you can use a geometry test pattern for a visual adjustment, or calculate the numbers by maintaining the 16:9 ratio between Horizontal Size (default 1920) and Vertical size (default 1080). If the input is standard-definition and letterboxed, use 64:27 to calculate the correct setting for a 16:9 screen. Horizontal and Vertical position defaults are 960 and 540, respectively.

Trim Edges

This selection is independent of the preceding ones. When "On" is selected, the edges of the input are trimmed. Use if you see "garbage" on the edges of the image or for removing the small amount of letterboxing that results from displaying movies with a 1.85:1 aspect ratio on a 16:9 (or 1.78:1) screen when the display is not overscanning. Number of pixels removed is adjustable from 0 to 20.

SCALE OUTPUT

The Scale Output menu provides options for making non-16:9 inputs fit on a 16:9 screen.

PICTURE	CROP INPUT	SCALE OUT	OUTPUT	PATTERNS	INFO

Panoramic Stretch

Anamorphic Stretch

Pillar Box

No Scaling   ▶
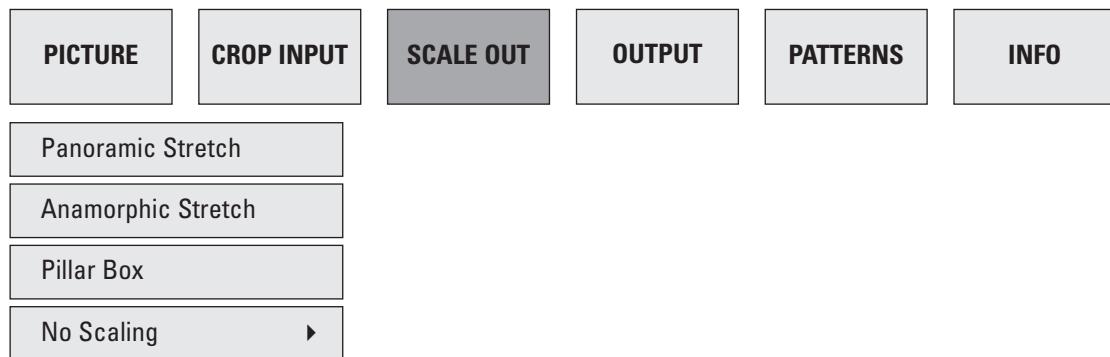
Panoramic Stretch
Fills the screen by stretching only the sides of the picture while the middle portion stays undistorted. Use with 4:3 input if you don't like seeing empty sides on a 16:9 screen.

Anamorphic Stretch
Fills the screen by stretching the picture sideways. Use this setting for standard-def DVDs that are anamorphic or "enhanced for widescreen TVs" – the image on these DVDs is squeezed sideways so that no vertical resolution is wasted on a letterbox, and made normal upon playback assuming that the DVD player is properly set (16:9 output). Also use this setting with anamorphic projection and Custom input cropping.

Pillar Box
With this setting, original aspect ratio is preserved for standard-def input, leaving the sides of the screen empty. The shade of the empty areas can be adjusted in menu 1. Not applicable when input is 720p or higher.

No Scaling
To quickly check what the source component is putting out in unscaled form, select No Scaling then make the appropriate selection above. Horizontal Size and Vertical Size adjustments close in on the outside of the image, and if they're changed from the factory defaults (100), Horizontal Position and Vertical Position become adjustable.

If the source and the display have the same resolution then No Scaling also allows trimming the edges of an input without enlarging it to compensate for the empty area. For example, if you're using a 1080p-native display and a 1080i source needs trimming, use Trim Edges: On in the Crop Input menu (minimum 2 pixels) and select No Scaling. The result is 1:1 pixel mapping for the remaining image.

> **Since a disc's menu and the main title do not always have the same aspect ratio, select scaling according to the main title.**

Aspect Ratio Control Examples – how to crop and scale various sources for display on 16:9 and 2.4:1 screens:

Display as original

Standard-definition 4:3 source

CROP INPUT: Auto Detect
SCALE OUTPUT: Letter / Pillar Box

Stretch sideways to fill screen

Standard-definition 4:3 source

CROP INPUT: Auto Detect
SCALE OUTPUT: Anamorphic Stretch

Stretch sides more than center

Standard-definition 4:3 source

CROP INPUT: Auto Detect
SCALE OUTPUT: Panoramic Stretch

Display as original

Standard-definition letterboxed source

CROP INPUT: 16:9
SCALE OUTPUT: Anamorphic Stretch

Display as original

Anamorphic SD-DVD, 16:9 source

CROP INPUT: Auto Detect
SCALE OUTPUT: Anamorphic Stretch

Display as original

Anamorphic SD-DVD, 2.4:1 source

CROP INPUT: Auto Detect
SCALE OUTPUT: Anamorphic Stretch

Aspect Ratio Control Examples continued
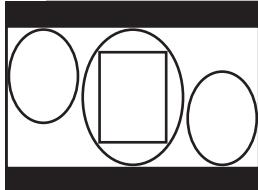
Crop and/or stretch to fill screen

Anamorphic SD-DVD, 2.4:1 source

CROP INPUT: Custom, adjust to taste
SCALE OUTPUT: Anamorphic Stretch

Display as original using anamorphic lens

Anamorphic SD-DVD, 2.4:1 source

CROP INPUT: Custom, Vertical Size 810
SCALE OUTPUT: Anamorphic Stretch

Display as original
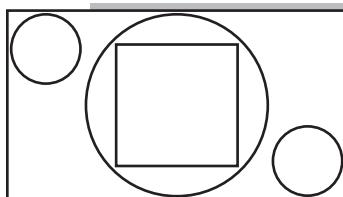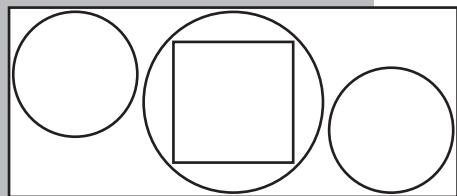
Hi-definition 16:9 source

CROP INPUT: Auto Detect
SCALE OUTPUT: Anamorphic Stretch
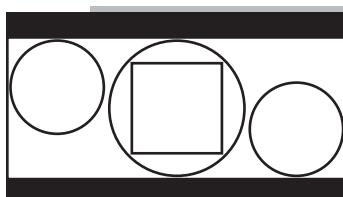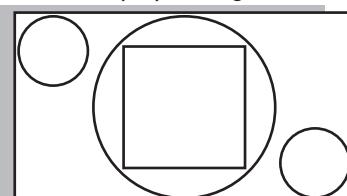
Display as original

Hi-definition 2.4:1 source
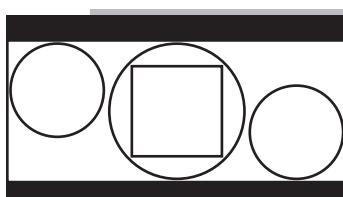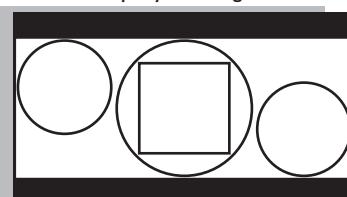
CROP INPUT: Auto Detect
SCALE OUTPUT: Anamorphic Stretch

Crop and/or stretch to fill screen
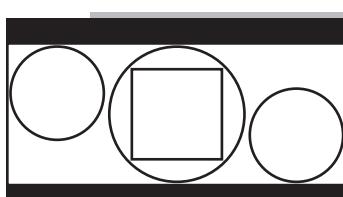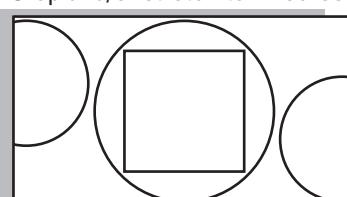
Hi-definition 2.4:1 source

CROP INPUT: Custom, adjust to taste
SCALE OUTPUT: Anamorphic Stretch

Display as original using anamorphic lens

Hi-definition 2.4:1 source

CROP INPUT: Custom, Vertical Size 810
SCALE OUTPUT: Anamorphic Stretch
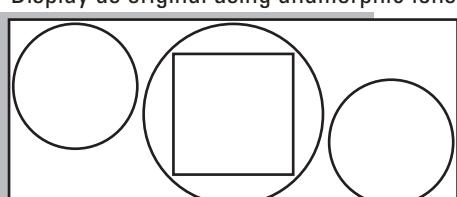
OUTPUT

The Output menu is used to select gamma correction and to turn frame lock on/off.

PICTURE	CROP INPUT	SCALE OUT	OUTPUT	PATTERNS	INFO

Gamma Corr Exponential ▶

Gamma Corr Custom Sngl

Gamma Corr Custom RGB

Gamma Corr Off

Frame Lock   ▶

Gamma Correction (normally for use only by calibration specialists)
The default is Off. Curves other than exponential (default 100) are created with a computer – see section 3.1.

Frame Lock
The default is Off. Frame Lock is useful with video games by cutting processing time. When Auto is selected, buffering is disabled and the processor's output synchronizes with the source.

If your display accepts various refresh rates and your disc player has passthrough mode, you can also use Frame Lock to match refresh rate to the source material (24 Hz / 50 Hz / 60 Hz), overriding the refresh rate selected in menu 1. Engaging Frame Lock increases source switching time, therefore it should not be used if not needed – assigning different video output configurations in menu 1 is more effective in this case.

"Auto" means that if the source has a nature that prevents Frame Lock from engaging, it will not engage.

TEST PATTERNS

This section is a primer on display calibration and although the procedure is no match for a professional setup, the result will almost always be better than using the display with its factory settings. The only tool needed to adjust color this way is a blue filter that comes with test discs or the glasses from www.thx.com.

These digitally generated patterns can be more accurate than those played from a disc since some discs and players contain errors in design or user settings.

PICTURE	CROP INPUT	SCALE OUT	OUTPUT	PATTERNS	INFO

Gray Bars
Red Bars
Green Bars
Blue Bars
Gray/Red/Green/Blue Bars
Color Bars
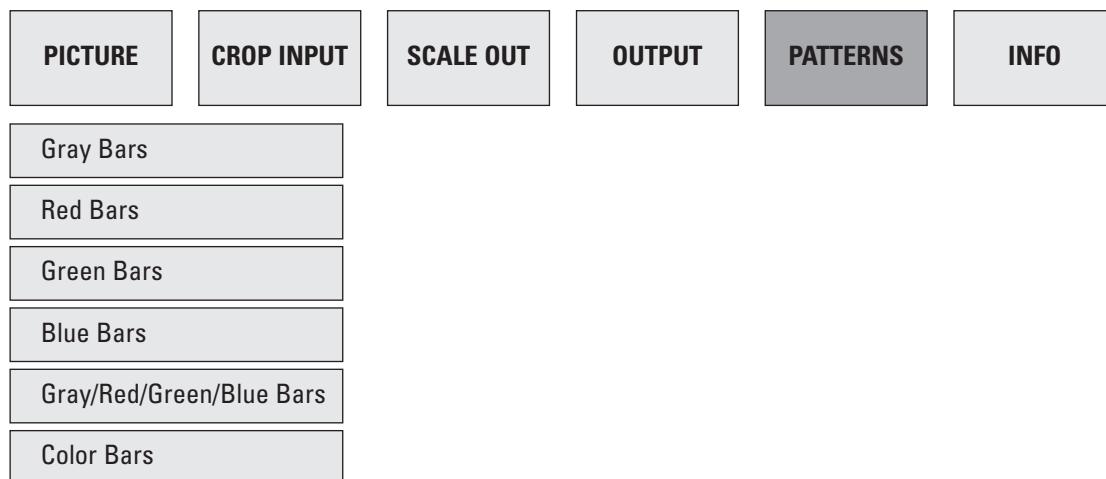
Before starting calibration

Set the room's lighting to the level that will be used during normal viewing. If your display varies light output according to the brightness of the image and/or ambient light, turn off these functions for now. If color temperature is selectable, select "medium" or the one that is neither too blue nor too red. If your display has DVI input, ensure that the correct output between Studio and Extended RGB is selected in menu 1.

The best setting for the display's sharpness control is usually at its lowest even when the default position is in the center. Sharpness is the addition of false edges around objects in the image and there is no reason to add false edges on all video sources unless there is something wrong with all video sources.

Any of these patterns can also be used to check whether the display is showing the whole image – if the bars at the left and right of the screen are narrower than the rest, your display is cropping and rescaling the image. As mentioned in section 3.1, see if you can disable this (select dot-by-dot mode in your display).

This is the gray 20-bar pattern – the red, green, blue, and gray/red/green/blue ones are similar:
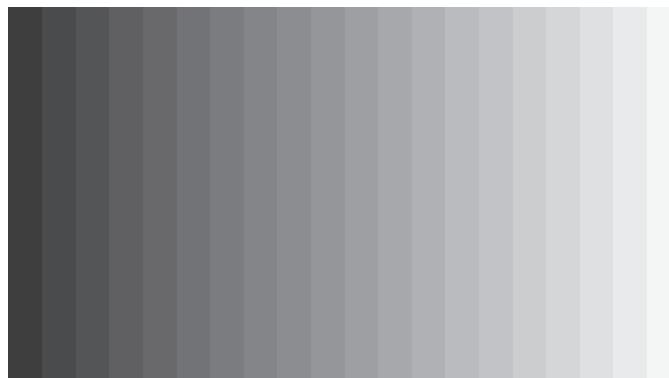
Black level is one step below the pattern's darkest bar and full level is one step beyond the brightest bar.

Color Bars is the SMPTE test pattern, with bars at 75% saturation:
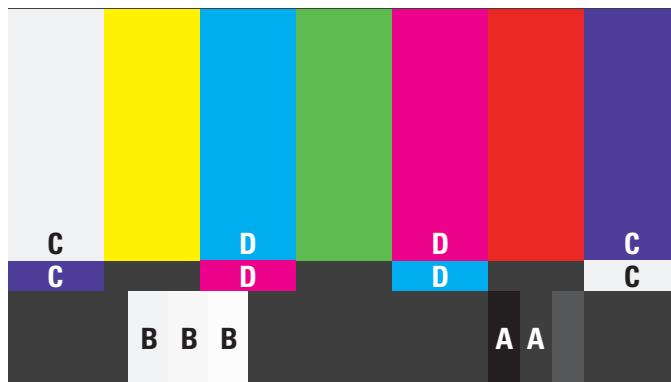
Setting your display's brightness and contrast

Increase brightness (black level) so that areas **A** can be seen as two areas with different brightness, then reduce the level until these areas match each other, or in other words, when the A on the left disappears by blending into the background. (Difference in shade will not appear if output in menu 1 is Extended RGB.)

After setting brightness, set contrast (white level) as high as possible so that areas **B** remain three areas with different and equally-spaced brightness. If the B in the middle starts to get closer in brightness to the B on the right, the contrast setting is too high for most lighting conditions.

Next, select the gray/red/green/blue bars pattern and if the rightmost bars in any of the colored areas are blended, reduce contrast until the areas can be seen separately. Depending on your display and/or lighting conditions, compromises in the settings may be necessary – try some sources with and without the display's automatic brightness compensation (where applicable) and trust your senses.

Setting your display's color and tint

Looking through the blue filter or glasses, adjust color (saturation) so that areas **C** match as closely as possible, then adjust tint (hue) so that areas **D** match as closely as possible.

After setting contrast and tint, check brightness and color – some fine tuning back and forth may be needed. Once again, trust your senses if the blue filter does not provide satisfactory results.

INFO

The Info panel shows Input Status (Video Source, Signal Type, Audio Source, and Film Mode) and Output Status (Signal Type, Frame Rate, Line Rate, and Frame Lock).

Shortcuts and emergency exits: Commonly adjusted settings and settings that make displays say "no signal" when the wrong selection is made can be accessed without entering menus. Press and hold **MODE** until "SCALE OUTPUT" is displayed, then select using the Master Control Knob or the ▲ ▼ keys on the remote control. Repeatedly pressing MODE before timeout cycles through Video Output Configuration, Frame Lock, and Gamma Correction.

If you have lost video output by changing settings, use the front panel display to correct the settings.

To quickly access Brightness, Contrast, Color, and Tint press and hold **DYNAMICS** until the Brightness slider appears, then use the ▲ ▼ keys to change slider and the ◀ ▶ keys to adjust.

4.12 **SLEEP TIMER** (remote control only)

If you would like to go sleep while listening to a program or music, the Sleep Timer will turn the processor power off after the selected amount of time:

- Select the desired path (MAIN, ZONE2, or ZONE3), then press **SLEEP** (the Sleep timer will operate for that path only).

- The first **SLEEP** keystroke always resets the timer to 30 minutes. Additional keystrokes then cycle as follows: Second=60, third=90, fourth=Disabled.

- Once set, the time remaining appears as the number following "Zzz" in the display.

4.13 **ENABLE / DISABLE TIMERS** (remote control only)

To enable or disable all timers without entering the Setup, press and hold the **SLEEP** key until the display shows "ALL TIMERS", then use the ▲ ▼ keys to enable/disable.

4.14 **STATUS DISPLAY**

Press, Release, Press to cycle through display screens that show the following:

- **Software version**, **day**, and **time**.
- **Video Input:** Resolution and refresh rate of video source, and copy protection status if available – "CP" means copy-protected, "NP" means not protected.
- **Audio Input:** Format, sample rate of lossless digital audio source or bit rate of lossy-compressed digital audio source, copy protection status for HDMI input.
- **Audio Input Format:** Source channels.
- **Copy Protection:** Displayed when outputs are restricted along with the type of restriction.
- **Video Output Configuration:** The active one and its resolution/refresh rate.
- **Audio Output:** Bit rate / sample rate running in the digital to analog converters.
- **Audio Output Format:** Channels producing output.
- **Dialog Normalization:** Displayed if not equal to 0 dB.
- **Tone Controls:** Enabled, Bypassed, or N/A.
- **Serial Number:** If the number on the rear panel does not match, contact Anthem immediately.
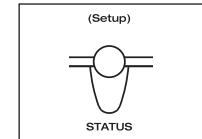
When in ZONE2 or ZONE3, information relating only to the selected path is displayed.

5. REMOTE CONTROL CUSTOMIZATION

5.1   CODES FOR OTHER BRANDS

The processor remote can control other components – brands and setup instructions are in Appendix B. If the brand for your component is not listed, try searching for a code:

1. Turn on the component, for example the DVD player.

2. Press a **control mode** key <u>other than</u> MAIN, Z2, or Z3, for example **DVD**.

3. Press and hold **LEARN** until the light (control mode key) flashes twice then press **9**, **9**, **1**.

4. Press **0** for cable converters, satellite receivers, or video accessories, **1** for TVs, **2** for DVD players or VCRs, or **3** for CD players or audio amps/tuners.

5. Aim the remote towards the player and press **POWER** (or Play). If the player does not respond, press **CH+** to try the next code. If the player responds, press **LEARN** to lock the code. Codes are sent in order of popularity. CH**−** goes to the previous code. **If no code is found, see section 5.2.**

6. After finding a code, record it: Press and hold **LEARN** until the light flashes twice, then press **9**, **9**, **0**, **1**. Wait 3 seconds and count the number times that the light flashes. This represents the first digit (for example, 3 flashes = 3, no flash = 0) – write this down. Next, press **2** for the second digit, **3** for the third digit, **4** for the fourth digit, **5** for the fifth digit and write the number of flashes each time.

5.2   LEARNING COMMANDS

Commands from other infra-red remote controls can be captured by the processor remote control. The factory command is still available by pressing LEARN before pressing the taught key.

If the factory command is used more than the learned command, the learned command can be programmed in Layer2 instead. In this case, the learned command is sent by pressing LEARN before pressing the key.

Before teaching a key note the following:

- Control mode keys and LEARN can not be taught. <u>These keys never send IR commands</u>.

- A multiple key sequence (for example Rec+Pause or Rec+Play) can not be taught to one key.

- A high level of ambient light, light from displays, and exposed fans could interfere with learning.

To teach a key:

1. Point the source and processor remotes at each other, holding them 2 inches apart.

2. Press and hold **LEARN** until the light flashes twice then press **9**, **7**, **5**. One long blink indicates low battery or faulty memory – the remote will not go into learn mode under these conditions.

3. Press the desired **control mode** key.

4. Press the **key to be taught**, or to program the command into Layer2 press **LEARN** (don't hold) then press the **key to be taught**.

5. The light flashes rapidly. Within 4 seconds, press and hold the **teaching key on the source remote** until the light flashes twice. One long blink means bad capture (try again), memory full (delete another command), or unlearnable code.

6. Repeat steps 3-5 or 4-5 as often as desired until memory is full.

7. To exit, press and hold **LEARN** until the light flashes twice or wait 10 seconds.

Deleting learned commands:

1. Press and hold **LEARN** until the light flashes twice, then press **9**, **7**, **6**.

2. To delete a learned command from one key, press the **control mode** key, then the **key to be deleted** twice. To delete all learned commands in the control mode, press the **control mode** key twice.

5.3 COPYING COMMANDS

The command from one key can be copied to another key (not applicable to Power, Record, and Learn keys).

To copy a command to another key in the same control mode:

1. Press the **control mode** key.

2. Press and hold **LEARN** until the light flashes twice.

3. Press **9**, **9**, **4**.

4. Press the **key to be copied**.

5. Press the **new key** that will have the command. The light flashes twice.

To copy a command into a different control mode:

1. Press and hold **LEARN** until the light flashes twice.

2. Press **9**, **9**, **4**.

3. Press the **control mode** key of the key to be copied then the **key to be copied**.

4. Press the **new control mode** then the **new key** that will have the command. The light flashes twice.

To set the original functions:

1. Press the **control mode** key.

2. Press and hold **LEARN** until the light flashes twice.

3. Press **9**, **9**, **4**.

4. Press the **control mode** key twice.

5.4 VOLUME LOCK

With Volume Lock engaged, the volume and mute keys control the processor regardless of control mode, making operation more convenient.

To engage Volume Lock for MAIN:

1. Press and hold **LEARN** until the light flashes twice.

2. Press **9**, **9**, **3**.

3. Press **MAIN**.

To disengage Volume Lock for ZONE2 (or ZONE3), and re-engage the ZONE2 (or ZONE3) volume control**:**

1. Press **ZONE2** (or ZONE3).

2. Press and hold **LEARN** until the light flashes twice.

3. Press **9**, **9**, **3**.

4. Press **VOL−**.

The volume and mute keys now control MAIN for every control mode selection except ZONE2. You may continue to disengage other control modes one at a time. To disengage all, press **VOL+** in step 4.

5.5   PROGRAMMING MACROS

Macros are used to execute multiple functions with one key press, such as powering the processor, cable box, and display On at the same time. Up to 32 commands can be programmed.

Programming a Macro that works regardless of control mode setting:

　　　1. Press and hold **LEARN** until the light flashes twice.

　　　2. Press **9**, **9**, **5**.

　　　3. Press the key you want to use to activate your macro (e.g. Power).

　　　4. Enter the command sequence that you want the macro to execute.

　　　5. To exit, press and hold **LEARN** until the light flashes twice or wait 10 seconds.

To clear the macro, repeat the steps above but skip step 4.

Programming a Macro that works in one control mode:

　　　1. Press the control mode key.

　　　2. Press and hold **LEARN** until the light flashes twice.

　　　3. Press **9**, **7**, **8**.

　　　4. Press the key you want to use to activate your macro (e.g. Power).

　　　5. Enter the command sequence that you want the macro to execute.

　　　6. To exit, press and hold **LEARN** until the light flashes twice or wait 10 seconds.

To clear the macro:

　　　1. Press and hold **LEARN** until the light flashes twice, then release.

　　　2. Press **9**, **7**, **8**.

　　　3. Press the control mode key where you programmed the macro.

　　　4. Press the key that was programmed to activate the macro.

　　　5. To exit, press and hold **LEARN** until the light flashes twice or wait 10 seconds.

5.6   RESETTING THE REMOTE CONTROL

To erase user memory, press and hold **LEARN** until the light flashes twice, then press **9**, **8**, **0**. To reset MAIN, Z2, or Z3 control mode, see the beginning of Appendix B.

If your remote control has stopped working, reset it before contacting technical support.

6. SOFTWARE **UPDATING**

The operational characteristics of the processor are controlled by software installed through the RS-232 port on the rear panel. Updates can be downloaded from our web site and installed afterwards.

6.1 SOFTWARE VERSION IDENTIFICATION

To find out which software version is in your processor, press **STATUS** and the display will show it. The latest software and manual are available from our web site. A list of changes comes with the download.

6.2 SOFTWARE UPDATING VIA YOUR DEALER

If you do not have a computer or wish to do software updates yourself but still want to have them done, please make arrangements with your dealer. Whether your dealer comes to your theater to do the update or you bring your processor to the dealer, the dealer may charge for this service.

6.3 SOFTWARE UPDATING VIA YOUR COMPUTER

For computer and connection requirements, see section 3.15.

Software installation:

1. Find out which version is installed by pressing **STATUS**.
2. Go Anthem's web site www.anthemAV.com and locate the latest software. Proceed only if your version is a lower number, indicating that it is older.
3. Click on the software link. You will be asked where to save a .zip file – save it to Desktop.
4. Double click or right-click on the downloaded file then extract it to Desktop.
5. In the extracted folder see Read Me.txt for the change history.
6. Double click on Installer.exe. The remaining instructions will appear.

Troubleshooting:
If the installer keeps returning a message saying that the processor is not found, make sure that the serial port on your computer isn't being used by another application – you must go into the application that is using it to turn off the serial port.

APPENDIX A – **IR MACROS**

Using the factory remote control's IR codes for MAIN, the following 3-key macros can be programmed into suitable aftermarket remotes to create a separate button for each mode, source, and tuner bank:

For <u>Stereo</u> sources:
MODE, 0, 1 – Stereo
MODE, 0, 2 – AnthemLogic-Music
MODE, 0, 3 – AnthemLogic-Cinema
MODE, 0, 4 – Pro Logic IIx Music
MODE, 0, 5 – Pro Logic IIx Movie
MODE, 0, 6 – Dolby Pro Logic
MODE, 0, 7 – DTS Neo:6 Music
MODE, 0, 8 – DTS Neo:6 Cinema
MODE, 0, 9 – All Channel Stereo
MODE, 1, 0 – All Channel Mono
MODE, 1, 1 – Mono
MODE, 1, 2 – Mono-Academy
MODE, 1 ,3 – Pro Logic IIx Matrix
MODE, 1, 4 – Pro Logic IIx Game
THX, 0, 1 – THX Off
THX, 0, 2 – THX Cinema
THX, 0, 3 – THX Games Mode

For <u>Surround-flagged Dolby Digital 2.0</u> sources:
MODE, 2, 1 – Stereo
MODE, 2, 2 – AnthemLogic-Music
MODE, 2, 3 – AnthemLogic-Cinema
MODE, 2, 4 – Pro Logic IIx Music
MODE, 2, 5 – Pro Logic IIx Movie
MODE, 2, 6 – Dolby Pro Logic
MODE, 2, 7 – DTS Neo:6 Music
MODE, 2, 8 – DTS Neo:6 Cinema
MODE, 2, 9 – All Channel Stereo
MODE, 3, 0 – All Channel Mono
MODE, 3, 1 – Mono
MODE, 3, 2 – Mono-Academy
MODE, 3 ,3 – Pro Logic IIx Matrix
MODE, 3, 4 – Pro Logic IIx Game
THX, 0, 4 – THX Off
THX, 0, 5 – THX Cinema
THX, 0, 6 – THX Games Mode

Pro Logic IIx Music adjustment:
MODE, 4, 1 – Center Width display
MODE, 4, 2 – Dimension display
MODE, 4, 3 – Panorama Off
MODE, 4, 4 – Panorama On

Neo:6 Music adjustment:
MODE, 4, 5 – Center Image display

THX Re-EQ:
THX, 3, 0 – Re-EQ Off when THX is on
THX, 3, 1 – Re-EQ On when THX is on
THX, 3, 2 – Re-EQ Off when THX is off
THX, 3, 3 – Re-EQ On when THX is off

For <u>Dolby Digital 5.1</u> sources:
THX, 1, 0 – None
THX, 1, 1 – THX Cinema
THX, 1, 2 – THX Ultra2 Cinema
THX, 1, 3 – THX MusicMode
THX, 1, 4 – THX Surround EX
THX, 1, 5 – THX Games Mode
THX, 1, 6 – PLIIx Movie
THX, 1, 7 – PLIIx Movie+THX Cinema
THX, 1, 8 – PLIIx Music
THX, 1, 9 – Dolby Digital EX
THX, 2, 0 – Neo:6
THX, 2, 1 – Neo:6+THX Cinema

For <u>Dolby Digital Surround EX-flagged</u> sources:
MODE, 5, 1 – None
MODE, 5, 2 – Dolby Digital EX
MODE, 5, 3 – THX Surround EX
MODE, 5, 4 – PLIIx Movie
MODE, 5, 5 – PLIIx Movie+THX Cinema
MODE, 5, 6 – PLIIx Music
MODE, 5, 7 – Neo:6
MODE, 5, 8 – Neo:6+THX Cinema

For <u>6-Ch</u> sources (analog or HDMI):
MODE, 7, 0 – None
MODE, 7, 1 – THX Cinema
MODE, 7, 2 – THX Ultra2 Cinema
MODE, 7, 3 – THX MusicMode
MODE, 7, 4 – THX Surround EX
MODE, 7, 5 – THX Games Mode
MODE, 7, 6 – PLIIx Movie
MODE, 7, 7 – PLIIx Movie+THX Cinema
MODE, 7, 8 – PLIIx Music
MODE, 7, 9 – Dolby Digital EX
MODE, 8, 0 – Neo:6
MODE, 8, 1 – Neo:6+THX Cinema

For <u>6.1-</u> and <u>7.1- channel</u> sources:
THX, 6, 0 – None
THX, 6, 1 – THX Cinema

For <u>DTS</u> sources:
THX, 4, 0 – None
THX, 4, 1 – THX Cinema
THX, 4, 2 – THX Ultra2 Cinema
THX, 4, 3 – THX MusicMode
THX, 4, 4 – Neo:6+THX Cinema
THX, 4, 5 – THX Games Mode
THX, 4, 6 – PLIIx Movie
THX, 4, 7 – PLIIx Movie+THX Cinema
THX, 4, 8 – PLIIx Music
THX, 4, 9 – Dolby Digital EX
THX, 5, 0 – Neo:6

For <u>DTS-ES</u> sources:
MODE, 6, 1 – None
MODE, 6, 2 – DTS-ES Matrix
MODE, 6, 3 – DTS-ES+THX Cinema
MODE, 6, 4 – PLIIx Movie
MODE, 6, 5 – PLIIx Movie+THX Cinema
MODE, 6, 6 – PLIIx Music
MODE, 6, 7 – Dolby Digital EX

The macros below also work in ZONE2/3.

Tuner Bank Selection:
MODE, 9, 0 – AM
MODE, 9, 1 – FM1
MODE, 9, 2 – FM2
MODE, 9, 3 – FM3

Source Selection:
THX, 8, 0 – CD
THX, 8, 1 – 2-Ch BAL
THX, 8, 2 – 6-Ch S/E
THX, 8, 3 – TAPE
THX, 8, 4 – FM•AM
THX, 8, 5 – DVD1
THX, 8, 6 – DVD2
THX, 8, 7 – DVD3
THX, 8, 8 – DVD4
THX, 8, 9 – TV1
THX, 9, 0 – TV2
THX, 9, 1 – TV3
THX, 9, 2 – TV4
THX, 9, 3 – SAT1
THX, 9, 4 – SAT2
THX, 9, 5 – VCR
THX, 9, 6 – AUX

When using Simulcast mode, all sources must be selected using macros, and within 2 seconds.

Some tips if you're using a macro-capable remote control:

- If you do not want separate mode selection according to flagged vs unflagged source material, you can program macros as a 6-key sequence, for example MODE, 0, 1, MODE, 2, 1 and flag will make no difference to selection.

- You can program your source selection keys with the power-on command preceding each source-select command. This way, when a source is selected, the processor will turn on at the same time if it is off, similar to front panel operation.

- If your source components also have discrete commands for power-on and power-off, you can take the above idea even further, for example, program the TV button with the following sequence: Power-on the processor, select TV, power-on the satellite receiver / cable box, power-on the TV. This way, when the entire system is off and you or a family member wants to watch TV, "just push TV".

If codes for your components are not in this library, see sections 5.1 and 5.2. To enter a 5-digit code:

1. Press the control mode key near the top of the remote (e.g. **DVD**).
2. Press and hold **LEARN** until the light flashes twice.
3. Enter the **5-digit code**. Two light flashes indicate that the code is accepted.

Anthem Products:

D1/2/2v, AVM 20/30/40/50/50v – MAIN	31185
D1/2/2v, AVM 20/30/40/50/50v – ZONE2	31186
D1/2/2v, AVM 20/30/40/50/50v – ZONE3	31187
LTX 300/500	11633

Blu-ray Players:

Denon	22258
LG	20741
Marantz	22414
Oppo	22545
Panasonic	21641
Pioneer	22442
Samsung	20199
Sony	21516

CD Players:

Acoustic Research	30420
Admiral	30305
Aiwa	30157
Arcam	30157
Audio Research	30157
Burmester	30420
Cairn	30157
California Audio Labs	30029, 30303
Cambridge Soundwks	30157
Carver	30157, 30179
Curtis Mathes	30032
Denon	30626, 30003, 30034
DKK	30000
DMX Electronics	30157
Emerson	30305
Fisher	30000, 30179
Funai	30305
Garrard	30393, 30420
Genexxa	30032, 30305
Grundig	30157
Hafler	30173
Harman/Kardon	30100, 30157, 30173
Hitachi	30032
Inkel	30157, 30180
Integra	30101
Jerrold	30003
JVC	30032, 30072
Kenwood	30626, 30000, 30029, 30028, 30037, 30190
KLH	31318, 31372, 31373, 31711
Krell	30157
Linn	30157
LXI	30179, 30305
Magnavox	30157, 30038, 30274, 30305
Marantz	30626, 30029, 30157, 30038, 30180, 30435
Matsui	30157
McIntosh	30256, 30290, 30660
MCS	30029
Memorex	30000, 30032, 30179, 30420, 30468
Micromega	30157
Miro	30000
Mission	30157
Modulaire	30000, 30032, 30087, 30179, 30180, 30420, 30468
MTC	30420
NSM	30157
Onkyo	31327, 30101
Optimus	30000, 30032, 30037, 30087, 30179, 30305, 30393, 30420, 30468
Panasonic	30029, 30303, 30388, 30752
Parasound	30420
Penney	30029
Philips	30626, 30157, 30274

Pioneer	31062, 30032, 31087, 30305, 30468
Polk Audio	30157
Proceed	30420
Proton	30157
QED	30157
Quad	30157
Quasar	30029
RadioShack	30000, 30032, 30179, 30180, 30420, 30468
RCA	31062, 30032, 30053, 30179, 30305, 30420, 30468
Realistic	30000, 30032, 30087, 30179, 30180, 30305, 30420, 30468
Revox	30157
Roksan	30435
Rotel	30157, 30420
SAE	30157
Sansui	30000, 30157, 30305
Sanyo	30000, 30087, 30179
Scott	30305
Sears	30179, 30305
Sharp	30037, 30034, 30180
Sherwood	30180
Sonic Frontiers	30157
Sony	30490, 30000, 30100, 31364, 30185
Sugden	30157
Sylvania	30157
Symphonic	30180, 30305
TAG McLaren	30157
Tandy	30032
Tascam	30393, 30420
Teac	30490, 30180, 30378, 30393, 30420
Technics	30029, 30303
Techwood	30303
Thule Audio	30157
Victor	30072
Wards	30032, 30157, 30053, 30087, 30179
Yamaha	30490, 30036, 31292
Yorx	30000

DVD Players:

3D LAB	20503, 20539
Accurian	21072, 21416
Acoustic Solutions	20730
Advent	21016
Afreey	20698
Aiwa	20641
Akai	20695, 20705, 20770, 20899, 21089
Alba	20672, 20717
Alco	20790
Allegro	20869
Amphion Media Wks	20872
AMW	20872
Apex Digital	20533, 20672, 20717, 20755, 20794, 20796, 20797, 20830, 21004, 21020, 21056, 21061, 21100
Arrgo	21023
Aspire Digital	21168, 21407
Audiovox	20717, 20790, 21041, 21071, 21072, 21121, 21122
Awa	20730
Axion	21071, 21072
Blaupunkt	20717
Blue Parade	20571
Blue Sky	20695
Bose	21895
Brandt	20651
Broksonic	20695, 20868
Byd:sign	20872
California Audio Labs	20490

Celestial	21020
Centrex	20672, 21004
Cinea	20831
CineVision	20876, 20833, 20869
Citizen	21003, 21277
Clairtone	20571
Coby	20778, 21086, 21107, 21177
Craig	20831
Creative	20503, 20539
Curtis Mathes	21087
CyberHome	20816, 20874, 21023, 21024, 21117, 21129, 21502
Cytron	20705
Daewoo	20784, 20705, 20770, 20833, 20869, 21169, 21172, 21234, 21242
Dansai	20770
Daytek	20872
Decca	20770
Denon	20490, 20634
Denver	20778
Desay	21407
Digitrex	20672
Disney	20675, 21270
DiViDo	20705
Dual	20675, 21068, 21085
Durabrand	21127
DVD2000	20521
Electrohome	21003
Emerson	20591, 20675, 20821, 21268
Enterprise	20591
Entivo	20503, 20539
Enzer	20770
ESA	20821, 21268
Firstline	20651
Fisher	20670
Funai	20675, 21268, 21334
Gateway	21073, 21158
GE	20522, 20815, 20717
Go Video	20573, 20744, 20717, 20715, 20741, 20783, 20833, 20869, 21044, 21075, 21099, 21158, 21304, 21730
Go Vision	21071, 21072
GoldStar	20741, 20801, 20869
Goodmans	20790
Gradiente	20490, 20651
Greenhill	20717
Grundig	20539, 20705
Harman/Kardon	20582, 20702
Hitachi	20573, 20664, 21247, 21764
Hiteker	20672
Humax	21588
iLo	21348
Initial	20717
Insignia	21268
Integra	20571, 20627
IRT	20783
JBL	20702
Jensen	21016
JMB	20695
JVC	20558, 20623, 20867, 21164
Kawasaki	20790
Kenwood	20490, 20534
KLH	20717, 20790, 21020, 21149
Kloss	20533
Koss	20651, 21061
Lasonic	20627, 20798
Lecson	21533
Lenoxx	21127
LG	20591, 20741, 20801, 20869
LiteOn	21058, 21158, 21416, 21440
Loewe	20511, 20741
Logix	20783
Magnasonic	20651, 20675
Magnavox	20503, 20539, 20646, 20675,

	20821, 21268
Malata	20782, 21159
Marantz	20503, 20539, 20675
McIntosh	21533
Medion	20651
Memorex	20695, 20831, 21270
Microsoft	20522, 21708
Minato	20752
Mintek	20839, 20717
Mitsubishi	21521, 20521, 21403
Momitsu	21082
Mustek	20730
NAD	20591, 20741
Naiko	20770
NEC	20785, 20869
Nesa	20717
NexxTech	21402
Norcent	21003, 20872, 21107, 21265
Onkyo	20503, 20627, 20792
Optimus	20571
Oritron	20651
Palsonic	20672
Panasonic	20503, 20490, 20571, 20703, 21362, 21462, 21490, 21632, 21762
Philips	20503, 20539, 20646, 20675, 20854, 21260, 21267, 21354
PianoDisc	21024
Pioneer	20525, 20571, 20631
Polaroid	21020, 21061, 21086
Polk Audio	20539
Portland	20770
Presidian	20675, 21072
Prima	21016
Proceed	20672
Proscan	20522
ProVision	20778
Qwestar	20651
Radionette	20741
Radio Shack	20571
RCA	20522, 20571, 20717, 20790, 20822, 21022, 21132
Realistic	20571
Reoc	20752
Rio	20869
Rotel	20623
Rowa	20823, 21004
Saba	20651
Sampo	20698, 20752
Samsung	20490, 20573, 20744, 20820, 20899, 21044, 21075
Sansui	20695
Sanyo	20670, 20675, 20695, 20873, 21334
Schneider	20783
Schwaiger	20752
Sensory Science	21158
Sharp	20630, 20675, 20752, 21256, 21642
Sharper Image	21117
Sherwood	20770, 21043
Shinsonic	20533, 20839
Slim Art	20784
SM Electronic	20730
Sonic Blue	20573, 20715, 20783, 20869, 21099
Sony	20533, 21533, 20864, 21033, 21070, 21431
Sova	21122
Superscan	20821
SVA	20717, 20860
Sylvania	20675, 20821, 21268
Symphonic	20675, 20821, 21268, 21334
Tatung	20770
Teac	20571, 20717, 20790
Technics	20490, 20703
Technika	20770
Technosonic	20730
Tevion	20651
Theta Digital	20571
Thomson	20522, 20511
Tivo	21503, 21588
Toshiba	20503, 20573, 20539, 20695, 21045, 21154, 21503, 21588, 21639

Tredex	20800
Unimax	20770
United	20730
Universum	20591
Urban Concepts	20503, 20539
US Logic	20839
V	21064, 21226
Venturer	20790
Victor	21597
Vizio	21064, 21226
Xbox	20522, 21708
Yamaha	20490, 20539, 20545
Yamakawa	20872
Zenith	20503, 20591, 20741, 20869
Zeus	20784
Zoece	21265

VCRs:

A-Mark	20037, 20240, 20000, 20278, 20046
ABS	21972
Admiral	20060, 20048, 20039, 20047, 20104, 20209, 20020, 20062, 20479
Adventura	20037, 20240, 20000
Adyson	20072
Aiko	20278
Aiwa	20037, 20000, 20124, 20307, 20479
Akai	20041, 20061, 20106, 20175
Alba	20209, 20072, 20278
Alienware	21972
Allegro	20039
America Action	20278
American High	20035, 20081
Amstrad	20000
Asha	20240
Astra	20035, 20240
Audiovox	20037, 20278, 20038
Avis	20000, 20072
Beaumark	20240
Bell & Howell	20035, 20048, 20039, 20000, 20104, 20046, 20479
Broksonic	20184, 20121, 20209, 20002, 20208, 20479, 21479
Calix	20037
Candle	20037, 20038
Canon	20035
Capehart	20002, 20020, 20062
Carrera	20240
Carver	20035, 20081
CCE	20072, 20278
Cineral	20278
Citizen	20035, 20037, 20240, 20000, 20209, 20278, 20479, 21278
Classic	20037
Colortyme	20060, 20035, 20045, 20278
Colt	20000, 20072
Craig	20037, 20047, 20240, 20072, 20271
Criterion	20000, 20072
Crosley	20035, 20081, 20000, 20149
Crown	20072, 20278
Curtis Mathes	20060, 20035, 20162, 20240, 20000, 20041, 20278, 20432, 20760, 21035
Cybernex	20240
CyberPower	21972
Daewoo	20037, 20045, 20278, 20020, 20046, 20561, 21278
Daytron	20037, 20278, 20020
Dell	21972
Denon	20081, 20042
Derwent	20041
DirecTV	20739
Dual	20000
Durabrand	20039, 20038
Dynatech	20240, 20000
Electrohome	20060, 20037, 20240, 20000, 20043, 20209, 20061
Electrophonic	20037
Emerald	20184, 20121
Emerex	20032
Emerson	20037, 20184, 20240, 20000, 20121, 20043, 20209, 20002,

	20278, 20202, 20208, 20061, 20479, 20561, 20593, 21278, 21479, 21593
Fisher	20039, 20047, 20000, 20104, 20046
Fuji	20035, 20033
Fujitsu	20045, 20000
Funai	20037, 20000, 20072, 20278, 20593, 21593
Garrard	20000
Gateway	21972
GE	20060, 20035, 20048, 20240, 20000, 20149, 20202, 20760, 20807, 21035, 21060
Gemini	20060
General	20045
Genexxa	20037, 20000, 20278
Go Video	20240, 20432, 20526, 20614
GoldStar	20035, 20037, 20039, 20000, 20278, 20038, 21237
Goodmans	20037, 20081, 20000, 20072, 20278, 20020, 20062
Gradiente	20000, 20008
Granada	20081, 20042
Grundig	20081
Harley Davidson	20000
Harman/Kardon	20081, 20038
Harvard	20072
Harwood	20072
Headquarter	20046
Hewlett Packard	21972
HI-Q	20035, 20047, 20000
Hitachi	20035, 20037, 20045, 20000, 20042, 20041, 20089, 20105, 21037
Howard Computers	21972
HP	21972
Hughes	20042, 20739
Humax	20739
Hush	21972
Hytek	20047, 20000, 20072
iBUYPOWER	21972
ITT Nokia	20240, 20041
Janeil	20240
Jensen	20067, 20041
JVC	20067, 20041, 20008, 20061, 21162
KEC	20037, 20278
Kenwood	20067, 20041, 20038, 20046
KLH	20072
Kodak	20035, 20037
KTV	20000
LG	20037, 20240, 20038, 21037
Linksys	21972
Lloyd's	20240, 20000, 20072, 20038, 20208
Loewe	20081
Logik	20240, 20000, 20072
Lumatron	20278
Luxor	20046, 20106
LXI	20037, 20000, 20042, 20067
M Electronic	20240
Magnasonic	20037, 20240, 20000, 20072, 20278, 20020, 20593, 21278
Magnavox	20035, 20037, 20048, 20039, 20081, 20240, 20000, 20149, 20563, 20593, 20618, 21593, 21781
Magnin	20240
Marantz	20035, 20081, 20038, 20062
Marta	20037
Matsui	20037, 20209
Matsushita	20035, 20162, 20081, 21162
Media Center PC	21972
MEI	20035
Memorex	20035, 20162, 20037, 20048, 20039, 20047, 20240, 20000, 20104, 20209, 20072, 20278, 20062, 20046, 20307, 20479, 21037, 21162, 21237, 21262
Metz	20037
MGA	20060, 20240, 20043, 20061
MGN Technology	20240
Microsoft	21972
Midland	20240

Mind	21972
Minolta	20042, 20105
Mitsubishi	20060, 20048, 20047, 20000, 20042, 20067, 20043, 20041, 20061, 20807
Motorola	20035, 20048
Movie Walker	20072
MTC	20240, 20000, 20072
MTX	20000
Multitech	20039, 20000, 20072
NAD	20240, 20104
NEC	20104, 20067, 20041, 20038
New Tech	20072
Nikko	20037, 20278
Nikkodo	20037, 20278
Nishi	20240
Niveus Media	21972
Noblex	20240
Northgate	21972
Olympus	20035, 20162, 20104
Onkyo	20222
Optimus	21062, 20035, 20162, 20037, 20048, 20047, 20240, 20000, 20104, 20062, 20432, 20593, 21048, 21162, 21262
Optonica	20062
Orion	20184, 20240, 20000, 20104, 20121, 20209, 20002, 20278, 20208, 20479, 21479
Panama	20035
Panasonic	21062, 20035, 20162, 20000, 20020, 20225, 20614, 20616, 21035, 21162, 21262
Penney	20035, 20162, 20037, 20047, 20081, 20240, 20000, 20042, 20067, 20038, 21035, 21237
Pentax	20042, 20105
Philco	20035, 20081, 20000, 20209, 20479
Philips	20035, 20162, 20048, 20081, 20045, 20000, 20209, 20062, 20616, 20618, 20739, 21081, 21181
Pilot	20037
Pioneer	20162, 20081, 20042, 20067
Polk Audio	20081
Portland	20278, 20020
Presidian	21593
Profitronic	20240
Proscan	20060, 20202, 20760, 21060
Protec	20000, 20072
Protech	20072
Pulsar	20039, 20240, 20278
Pulser	20240
Quarter	20046
Quartz	20035, 20047, 20046
Quasar	20035, 20162, 20002, 21035, 21162
Radio Shack	20035, 20162, 20037, 20048, 20047, 20240, 20000, 20104, 20046, 20062, 21037, 21162
Radix	20037
Randex	20037
RCA	20060, 20035, 20048, 20240, 20045, 20000, 20042, 20149, 20105, 20106, 20202, 20760, 20807, 20880, 21035, 21060
Realistic	20035, 20162, 20037, 20048, 20047, 20240, 20000, 20104, 20121, 20278, 20046, 20062, 21162
ReplayTV	20614, 20616
Ricavision	21972
Runco	20039
Samsung	20060, 20240, 20045, 20000, 20038, 20432, 20739, 21014
Samtron	20240
Sanky	20048, 20039
Sansui	20240, 20000, 20067, 20209, 20041, 20072, 20002, 20271, 20479, 21479
Sanyo	20047, 20240, 20000, 20104, 20046, 20159, 20479
Scientific Atlanta	20008
Scott	20184, 20045, 20121, 20043,

	20208
Sears	20060, 20035, 20162, 20037, 20048, 20039, 20047, 20033, 20045, 20000, 20042, 20104, 20067, 20043, 20209, 20041, 20072, 20046, 20105, 21237
Sharp	20048, 20047, 20032, 20000, 20062, 20807, 20848
Shintom	20039, 20240, 20000, 20072, 20208
Shogun	20240
Siemens	20037, 20104
Signature	20060, 20035, 20037, 20048, 20000, 20149, 20046, 20479
Singer	20037, 20240, 20072
Sonic Blue	20614, 20616
Sonographe	20046
Sony	20035, 20047, 20032, 20033, 20000, 20067, 20046, 20636, 21032, 21232, 21972
Soundmaster	20000
Stack 9	21972
STS	20042, 20105
SV2000	20000, 20072
SVA	20000
Sylvania	20035, 20081, 20000, 20043, 20593, 21593, 21781
Symphonic	20240, 20000, 20002, 20593, 21593
Systemax	21972
Tagar Systems	21972
Tandy	20000, 20104
Tatung	20048, 20081, 20000, 20067, 20041, 20008
Teac	20000, 20067, 20041
Technics	20035, 20162, 20037, 20000
Teknika	20035, 20037, 20000
Telecorder	20240
Telefunken	20041, 20208
Tevion	20479
Thomas	20000, 20002
Thomson	20060, 20041, 20202
Tisonic	20278
Tivo	20618, 20636, 20739, 21996
TMK	20240, 20000, 20208
TNIX	20037
Tocom	20240
Toshiba	20240, 20045, 20000, 20042, 20043, 20209, 20041, 20062, 20845, 21008, 21145, 21972, 21996
Tosonic	20278
Totevision	20037, 20240
Touch	21972
Trix	20037
Ultra	20045, 20278, 20020
Unitech	20240
Vector	20045
Vector Research	20184, 20038
Vextra	20072
Victor	20067, 20041, 20008
Video Concepts	20045, 20061
Videomagic	20037
Videosonic	20240, 20000, 20072
Viewsonic	21972
Villain	20000
Voodoo	21972
Wards	20060, 20035, 20037, 20048, 20047, 20081, 20033, 20240, 20045, 20000, 20042, 20043, 20041, 20072, 20038, 20149, 20046, 20062, 20479, 20760
Wharfedale	20593
White Westinghouse	20000, 20209, 20072, 20278, 20479
World	20209, 20002, 20479
XR-1000	20035, 20240, 20000, 20072, 20208
Yamaha	20041, 20038
Zenith	20037, 20039, 20033, 20000, 20209, 20041, 20278, 20479, 21139, 21479
ZT Group	21972

Satellite Receivers:

Aiwa	01514
AlphaStar	00772
Bell ExpressVu	00775
Chaparral	00216
Coolsat	01806
Crossdigital	01109
DirecTV	01377, 00392, 00566, 00639, 01639, 01142, 00247, 00749, 01749, 00724, 00819, 01856, 01076, 01108, 00099, 01109, 01392, 01414, 01442, 01443, 01444, 01609, 01640
Dish Network System	01505, 01005, 00775, 01170, 01775
Dishpro	01505, 01005, 00775, 01775
DX Antenna	01530
Echostar	01505, 01005, 00775, 01170, 01775
Expressvu	00775, 01775
Fortec Star	01821
Funai	01377
GE	00392, 00566
General Instrument	00869
GOI	00775, 01775
Hisense	01535
Hitachi	00749, 00819, 01518
Houston	00775
HTS	00775, 01775
Hughes	01142, 00749, 01749, 01442, 01443, 01444
Humax	01790
iLo	01535
Innova	00099
Jerrold	00869
JVC	00775, 01170, 01507, 01775
LG	01226, 01414
Magnavox	00724, 00722
Maspro	01530
McIntosh	00869
Memorex	00724
Mitsubishi	00749
Motorola	00869
NEC	01519
Netsat	00099
Next Level	00869
Optimus	00724
Panasonic	00247, 00701, 01508
Pansat	01807
Paysat	00724
Philips	01142, 00749, 01749, 00775, 00724, 00819, 01076, 00722, 00099, 01442
Pioneer	01142, 01442
Primestar	00869
Proscan	00392, 00566
Proton	01535
Radio Shack	00566, 00775, 00869
RCA	00392, 00566, 01142, 00775, 00855, 00143, 01392, 01442
Samsung	01377, 01142, 01276, 01108, 01109, 01442, 01609
Sharp	01489
SKY	00099
Sony	00639, 01639, 01524, 01640
Star Choice	00869
Star Trak	00772, 00869
Thomson	00392, 00566
Tivo	01142, 01442, 01443, 01444
Toshiba	00749, 01749, 00790, 00819, 01285, 01501, 01530
UltimateTV	01392, 01640
Ultrasat	01806
Uniden	00724, 00722
US Digital	01535
USDTV	01535
Voom	00869
Zenith	01856

PVRs:

ABS	21972
Alienware	21972
CyberPower	21972
Dell	21972

DirecTV	20739
Gateway	21972
Hewlett Packard	21972
Howard Computers	21972
HP	21972
Hughes	20739
Humax	20739
Hush	21972
iBUYPOWER	21972
Linksys	21972
Media Center PC	21972
Microsoft	21972
Mind	21972
Niveus Media	21972
Northgate	21972
Panasonic	20616
Philips	20618, 20739
RCA	20880
ReplayTV	20614, 20616
Samsung	20739
Sonic Blue	20614, 20616
Sony	20636, 21972
Stack 9	21972
Systemax	21972
Tagar Systems	21972
Tivo	20618, 20636, 20739
Toshiba	21008, 21972, 21996
Touch	21972
Viewsonic	21972
Voodoo	21972
ZT Group	21972

Satellite-controlled DVR / PVR:

DirecTV	01377, 00392, 00639, 01142, 01076, 00099, 01392, 01442, 01443, 01444, 01640
Dish Network System	01505, 00775
Dishpro	01505, 00775
Echostar	01505, 00775, 01170
Expressvu	00775
Hughes	01142, 01442, 01443, 01444
JVC	01170
Motorola	00869
Philips	01142, 01442
Proscan	00392
RCA	01392
Samsung	01442
Sharp	01489
Sony	00639, 01640
Star Choice	00869

VCR-controlled DVR / PVR:

Hughes	20739
Philips	20739
Samsung	20739

Cable Converters:

A-Mark	00008, 00144
ABC	00237, 00003, 00008, 00014, 00017
Accuphase	00003, 00014, 00017
Acorn	00237
Action	00237
Active	00237
Americast	00899
Amino	01822
Archer	00237
BCC	00276
Bell & Howell	00014
Bell South	00899
British Telecom	00003
Century	00008
Citation	00017
Clearmaster	00883
ClearMax	00883
Cool Box	00883
Coolmax	00883
Digeo	01187
Digi	00637
Director	00476
Dumont	00637
DX Antenna	01500
Emerson	00014
Fosgate	00276

Fujitsu	01497
GE	00144
General Instrument	00476, 00810, 00276, 00003, 00012, 00014
Gibralter	00003
GMI	00883
GoldStar	00144
Hamlin	00009, 00273
Hitachi	00003, 00008, 00009
Insight	00476, 00810
Jebsee	00014
Jerrold	00476, 00810, 00276, 00003, 00012, 00014
Maspro	01510
Memorex	00000
Mitsubishi	00003
Motorola	01376, 00476, 00810, 00276, 01187, 01254, 00014, 01106
Multitech	00883
Myrio	01822
NEC	01496
Nova Vision	00008
Novaplex	00008, 00017
NSC	00012, 00637
Oak	00017
Pace	01877, 00877, 00237, 00008
Panasonic	00000, 00008, 00144, 00107, 01488
Panther	00637
Paragon	00000, 00008, 00525
Penney	00000, 00637
Philips	01305, 00317
Pioneer	01877, 00877, 00144, 00533, 01500
Prism	00012
Pulsar	00000
Quasar	00000
Radio Shack	00883
RCA	01256
Regal	00276, 00279, 00273
Runco	00000
Samsung	00003, 00144
Scientific Atlanta	01877, 00877, 00477, 00237, 00003, 00000, 00008, 00012, 00017, 01510
Sony	01006, 01460
Sprucer	00144
Starcom	00003, 00014
Stargate	00014
Storm	00637
Sumitomo	01500
Supercable	00276
Supermax	00883
Thomson	01256
Tocom	00012
Torx	00003
Toshiba	00000, 01509
Tristar	00883
United Cable	00276, 00003, 00014
US Electronics	00276, 00003, 00008, 00017
V2	00883
Videoway	00000
Viewmaster	00883
Vision	00883
Vortex View	00883
Zenith	00000, 00525, 00899, 00017

Cable / PVR Combos:

Americast	00899
Amino	01822
Digeo	01187
General Instrument	00810
Jerrold	00810
Motorola	01376, 00810, 01187, 01106
Myrio	01822
Pace	01877, 00237
Pioneer	01877, 00877
RCA	01256
Scientific Atlanta	01877, 00877
Sony	01006
Supercable	00276
Thomson	01256
Zenith	00899

DVD-controlled DVD / PVR Combos:

Emerson	20675
Go Video	21730
Hitachi	21764
Mitsubishi	21403
Panasonic	20490, 21632
Pioneer	20631
RCA	20522
Sharp	20630, 21256, 21642
Sony	21033
Sylvania	20675
Toshiba	21503, 21639
Victor	21597

VCR-controlled DVD / PVR Combos:

Emerson	20000
RCA	20880
Sylvania	20000
Toshiba	21008, 21996

TVs:

A-Mark	10047, 10054, 10165
Accuscan	10047, 10018, 10135
Action	10030, 10185
Admiral	10047, 10054, 10017, 10051, 10093, 10463, 10180, 10018, 10165
Advantz	10282
Advent	10761, 10783, 10815, 10817, 10842, 11933
Adventuri	10000
Agna	10150
Aiko	10092
Akai	10060, 10812, 10702, 10030, 10145, 10151, 10672, 11903, 11935
Albatron	10700, 10843
Alfide	10672
Alleron	10030
Ambassador	10150, 10177
America Action	10180
American High	10000, 10060
Ampro	10751
Amstrad	10171, 10177
Amtron	10000, 10180
Anam	10180
Anam National	10055
AOC	10180, 10030, 10185
Apex Digital	10156, 10748, 10879, 10765, 10185, 10767, 11943
Audinac	10180
Audiovox	10451, 10180, 10092, 10623, 10802, 10875, 11937, 11951, 11952
Aventura	10171
Axion	11937
Baysonic	10180
Beaumark	10017, 10178, 10030
Belcor	10030
Bell & Howell	10054, 10154, 10093
BenQ	11032
Boxlight	10893
Bradford	10180
Brockwood	10178, 10030
Broksonic	10236, 10463, 10180, 10177, 11929, 11935, 11938
Candle	10030
Capehart	10017, 10178, 10030, 10092
Carnivale	10030
Carver	10054
Celebrity	10000
Celera	10765
Changhong	10156, 10765, 10767, 10783
Cineral	10451, 10092
Citek	10047
Citizen	10054, 10000, 10451, 10463, 10180, 10060, 10030, 10171, 10092, 10282, 11928
Civet	10185
Clairtone	10185
Clarion	10180
Classic	10030, 10092
Colortyme	10047, 10054, 10017, 10060, 10178, 10030, 10018

Commercial Solutions	11447, 10047
Conic	10178
Contec	10180, 10185
Craig	10180, 10171, 10282
Crosley	10054, 10000, 10180, 10030, 10171, 10187
Crown	10093, 10180, 10672
Crown Mustang	10672
Curtis Mathes	10047, 10054, 10154, 10000, 10051, 10451, 10093, 10180, 10060, 10702, 10178, 10030, 10145, 10166, 10018, 10466, 11147, 11347, 11919
CXC	10180
Cytron	11326
Daewoo	10451, 10178, 10092, 11661, 10623, 10661, 10672, 11755, 11756, 11928
Dayton	10092
Daytron	10178, 10030, 10092
Dell	11080, 11178
Denon	10145, 10055, 10511
Denstar	10628
Digital Life	10872
Dumont	10017, 10180, 10178
Durabrand	10463, 10180, 10178, 10171, 11034
Dwin	10093, 10720, 10774
Eaton	10060
Electroband	10000, 10185
Electrograph	11755
Electrohome	10154, 10000, 10150, 10178, 10030, 10151, 10185
Emerald	10178, 10177
Emerson	10047, 10154, 10451, 10236, 10463, 10180, 10150, 10178, 10171, 11944, 11929, 11928, 10623, 10282, 10185, 10177, 10135
Envision	10030, 10813
Epson	10833, 10840
ESA	10812, 10171, 11944
Fisher	10054, 10154, 10000, 10159
Fortress	10093
Fujitsu	10683, 10809, 10853
Funai	10000, 10180, 10171, 11904
Futuretech	10180
Gateway	11755, 11756
GE	11447, 10047, 10000, 10051, 10451, 10060, 10178, 10030, 10135, 10055, 10282, 11147, 11347, 10018, 11917, 11919, 11922
Gemini	10047
Gibralter	10017, 10000, 10030
Go Video	10886
Go Vision	11937
GoldStar	10047, 10054, 10178, 10030, 10018, 11154, 11926
Gradiente	10053
Grundig	10706, 10672, 10683
Grundy	10180
Grunpy	10180
Haier	11034, 10768
Hallmark	10236, 10180, 10178, 10135, 10187
Harley Davidson	10000, 10180, 10060, 10178, 10030, 11904
Harman/Kardon	10054
Harvard	10180
Havermy	10093
Heathkit	10017
Helios	10865
Hello Kitty	10451
Hewlett Packard	11089, 11494, 11502
Hisense	10748
Hitachi	10047, 10054, 10017, 10000, 10051, 10178, 11145, 10145, 10018, 10055, 10151, 10185, 11904, 11960
HP	11089, 11494, 11502
Hyundai	10849, 10865
Ima	10236, 10180, 10178
Infinity	10054
Insignia	10171, 11326, 11517

Inteq	10017, 10145
JBL	10054
JCB	10000
Jensen	10761, 10815, 10817, 11933
JIL	10030
Jutan	10030
JVC	10054, 10053, 10030, 10055, 10731, 11253
Kamp	10017, 10180, 10185
Kawasho	10030, 10185
KEC	10180, 10060
Kenwood	10180, 10030
KLH	10156, 10180, 10765, 10767
Kloss	10030
Konka	10180, 10080, 10628, 10632, 10638, 10703, 10707, 10720
Kost	11262
KTV	10463, 10180, 10030, 10185
Lark	10154
LG	10054, 11265, 10060, 10178, 10030, 10700, 10856, 11154, 11178, 11758
Lloyd's	10236, 10180, 10030, 11904
Logik	10236, 10180
LXI	10047, 10054, 10017, 10154, 10000, 10156, 10051, 10093, 10060, 10053, 10178, 10030, 10171, 10166, 10055, 10135, 10018, 10159, 10165
Magnasonic	10054, 10000, 10156, 10093, 10030, 10092, 11928
Magnavox	10047, 11454, 10054, 10154, 10000, 10250, 10051, 10180, 10060, 10030, 10171, 10092, 10706, 10187, 10282, 10386, 10802, 11254, 11755, 11904, 11931, 11944
Majestic	10017
Marantz	11454, 10054, 10030, 10704, 10854, 10855, 11154
Matsui	10177
Matsushita	10250, 10051, 10650
Maxent	11755, 11756
Megapower	10700
Megatron	10047, 10178, 10145, 10151
MEI	10185
Memorex	10154, 10463, 10180, 10150, 10178, 10030, 10165, 11926
MGA	10150, 10178, 10030
MGN Technology	10178
Micro Genius	10150
Midland	10047, 10017, 10051, 10018, 10135
Mitsubishi	10154, 10250, 10093, 11250, 10150, 10178, 10030, 10836, 10868, 11917
Monivision	10700, 10843
Motorola	10054, 10051, 10093, 10150, 10055
MTC	10180, 10060, 10030, 10092, 10185, 10282
Multitech	10180
NAD	10156, 10178, 10166, 10866
NEC	10047, 10156, 10178, 10030, 10497, 10704, 10882, 11704
NetTV	11755
Nikko	10178, 10030, 10092
Nikkodo	10178, 10030, 10092
Nishi	10030, 10018
Norcent	10748, 10824, 11089
Noshi	10018
NTC	10092
Nyon	10000
Olevia	11144, 11240, 11331
Onwa	10180
Optimus	10154, 10250, 10093, 10180, 10150, 10178, 10030, 10166, 10165, 10650
Optoma	10887
Optonica	10093, 10165
Orion	10017, 10236, 10463, 10180, 10178, 11463, 10177, 11929
Pace	10092
Panasonic	10054, 10000, 10156, 10250, 10051, 10236, 10030, 10018,

	10055, 10650, 11291, 11410, 11919, 11941, 11946, 11947
Panda	10706
Paxonic	10060, 10030
PCE	10156, 10060
Penney	10047, 10000, 10156, 10250, 10051, 10060, 10178, 10030, 10018, 10135, 10159, 11347, 11919, 11926
Philco	10054, 10463, 10030, 10145, 10187
Philips	11454, 10054, 10030, 10171, 10187, 10690, 11154, 11254
Pilot	10051, 10060, 10178, 10030
Pioneer	10166, 10055, 10679, 10866, 11260
Polaroid	10765, 10865, 11262, 11276, 11314, 11316, 11326, 11327, 11328, 11341
Portland	10451, 10092
Precision	10236, 10180, 10177, 10185, 10282
Prima	10761, 10783, 10815, 10817, 11933
Princeton	10700, 10717
Prism	10250, 10051, 10055
Proscan	11447, 10047, 10018, 10135, 10466, 11347, 11922
Proton	10178, 10466
Pulsar	10017, 10092
Pulser	10178, 10092
Quartz	10150, 10178
Quasar	10250, 10051, 10055, 10165, 10650, 11919
Rabbit	10047
Radio Shack	10047, 10154, 10180, 10150, 10178, 10030, 10165, 11904
RCA	11447, 10047, 10054, 10000, 10051, 10093, 10178, 11958, 11953, 11948, 11922, 11919, 11917, 11547, 11347, 11247, 11147, 11047, 10774, 10679, 10165, 10135, 10090, 10018
Realistic	10047, 10154, 10180, 10150, 10178, 10030, 10165
Rhapsody	10185
Road Authority	10282
Runco	10017, 10060, 10030, 10497, 10603
Sampo	10047, 10030, 11755, 11756
Samsung	10047, 10054, 10017, 10154, 10060, 10812, 10702, 10178, 10030, 11959, 11903, 11312, 11060, 10814, 10766, 10587, 10055
Sanky	10060, 10030
Sansui	10463, 10060, 10030, 10165, 11904, 11929, 11935
Sanyo	10047, 10054, 10154, 10000, 10463, 10171, 10159, 10799, 10893, 11755
Saville	10060
Sceptre	10878
Scotch	10178
Scott	10236, 10180, 10178, 10030, 10177
Sears	10047, 10054, 10017, 10154, 10000, 10156, 10051, 10093, 10060, 10053, 10178, 10030, 10171, 10166, 10055, 10135, 10018, 10159, 10165, 11904, 11926
Sharp	10054, 10093, 10180, 10165, 10386, 10491, 10688, 10689, 10818, 10851, 11393, 11917
Sheng Chia	10093
Shivaki	10178
Siemens	10145
Signature	10047, 10093, 10030, 10165, 10187
Signet	11262
Simpson	10178, 10030, 10187
Singer	10060, 10092
Solar Drape	10000
Sole	10813

Sony	10017, 10154, 11100, 10000, 10150, 10053, 10080, 10632, 10834, 11904, 11925
Soundesign	10180, 10178
Sova	11952
Spectravision	10156, 10178, 10159
Squareview	10171
SR2000	10154, 10171
SSS	10180
Starlite	10236, 10180
Studio Experience	10843
Superscan	10093, 10864, 11944
Supreme	10000
SV2000	10054
SVA	10748, 10587, 10768, 10865, 10870, 10871, 10872
Sylvania	10047, 10054, 10154, 10000, 10051, 10178, 10030, 10171, 10092, 10159, 10187, 11904, 11926, 11931, 11944
Symphonic	10000, 10180, 10178, 10171, 11904, 11944
Syntax	11144, 11240, 11331
Tandy	10093, 10165
Tatung	10000, 10051, 10055, 11756
Teac	10154, 10706, 10159, 10282, 10689
Technics	10054, 10250, 10051, 10055
Technovox	10030
Techview	10847
Techwood	10250, 10051, 10060, 10055
Teknika	10054, 10463, 10180, 10150, 10060, 10178, 10092
Telecolor	10017
Telefunken	10702
Thomas	10047, 10178, 11904
Thomson	11447, 10047
TMK	10236, 10180, 10178, 10177
TNCi	10017
Tocom	10156
Tomashi	10282
Toshiba	10154, 11256, 10156, 10150, 11265, 10060, 11145, 10145, 10166, 11945, 11936, 11935, 11918, 11704, 11656, 11356, 11156, 10845, 10832, 10650
Tosonic	10185
Totevision	10051
Toyomenka	10178
Truetone	10250, 10051, 10055
TVS	10463
Ultra	10092
Universal	10047, 10135
Universum	10177
V	10864, 10885, 11755, 11756
Vector Research	10030
Victor	10053
Vidikron	10054
Vidtech	10178
Viewsonic	10857, 10864, 10885, 11578, 11755
Viking	10060
Vizio	10864, 10885, 11499, 11756, 11758
Wards	10047, 10054, 10017, 10154, 10000, 10051, 10093, 10236, 10178, 10030, 10166, 11156, 10866, 10187, 10165, 10151, 10080, 10018
Waycon	10156
Welton	10178
Westinghouse	10000, 10451, 10885, 10889, 11282
White Westinghouse	10451, 10236, 10463, 10623, 10889
World	10451, 10236, 10463, 10180
XR-1000	10154, 10180, 10171
Yamaha	10030, 10769, 10833, 10839
Yorx	10030
Zenith	10047, 10017, 10000, 10093, 10463, 11265, 10812, 10178, 10030, 11145, 10145, 10171, 10092, 11904, 11929

DVD-controlled TV / DVD Combos:

Advent	21016
Akai	20695
Apex Digital	20830
Audiovox	21071, 21121, 21122
Axion	21071
Broksonic	20695
Emerson	20675, 21268
ESA	21268
Funai	21268
Go Vision	21071
Hitachi	21247
Insignia	21268
Jensen	21016
Magnavox	21268
Panasonic	21490
Philips	20854, 21260
Prima	21016
RCA	21022
Samsung	20899
Sansui	20695
Sova	21122
Sylvania	20675, 21268
Toshiba	20695

TV-controlled TV / DVD Combos:

Advent	11933
Akai	11935
Apex Digital	11943
Audiovox	11937, 11951, 11952
Axion	11937
Broksonic	11935
Hitachi	11960
Jensen	11933
Panasonic	11941
Prima	11933
RCA	11948, 11958
Samsung	11903
Sansui	11935
Sova	11952
Toshiba	11935

TV-controlled TV / VCR Combos:

America Action	10180
Audiovox	10180
Broksonic	11929
Citizen	11928
Curtis Mathes	11919
Daewoo	11928
Emerson	10236, 11928, 11929
Funai	11904
GE	11917, 11919, 11922
GoldStar	11926
Harley Davidson	11904
Hitachi	11904
Lloyd's	11904
Magnasonic	11928
Magnavox	11904, 11931
Memorex	11926
Mitsubishi	11917
Orion	11929
Panasonic	11919
Penney	11919, 11926
Quasar	11919
Radio Shack	11904
RCA	11917, 11919, 11922
Samsung	11959
Sansui	11904, 11929
Sears	11904, 11926
Sharp	11917
Sony	11904, 11925
Sylvania	11931
Symphonic	11904
Thomas	11904
Toshiba	11918, 11936
Zenith	11904, 11929

VCR-controlled TV / VCR Combos:

Aiwa	20479
America Action	20278
Audiovox	20278
Broksonic	20002, 20479, 21479
Citizen	21278
Colt	20072

Curtis Mathes	21035
Daewoo	21278
Emerson	20002, 20479, 20593, 21278, 21479
Funai	20000
GE	20240, 20807, 21035, 21060
GoldStar	21237
Harley Davidson	20000
Hitachi	20000
LG	21037
Lloyd's	20000
Magnasonic	20593, 21278
Magnavox	20000, 20593, 21781
Magnin	20240
Memorex	20162, 21037, 21162, 21237, 21262
MGA	20240
Mitsubishi	20043, 20807
Optimus	20162, 20593, 21162, 21262
Orion	20002, 20479, 21479
Panasonic	20162, 21035, 21162, 21262
Penney	20240, 21035, 21237
Quasar	20162, 21035, 21162
Radio Shack	20000, 21037
RCA	20240, 20807, 21035, 21060
Samsung	21014
Sansui	20000, 20479, 21479
Sanyo	20240
Sears	20000, 21237
Sharp	20807
Sony	20000, 21232
Sylvania	21781
Symphonic	20000, 20593
Thomas	20000
Toshiba	20845, 21145
Zenith	20000, 20479, 21479

DVD-controlled TV / VCR / DVD:

Akai	20899
Broksonic	20868
Emerson	20821
ESA	20821
Funai	21334
Magnavox	20821
Panasonic	21362, 21462
RCA	21132
Sharp	20630
Superscan	20821
Sylvania	20821
Symphonic	20821
Toshiba	21045

TV-controlled TV / VCR / DVD:

Akai	11903
Broksonic	11938
Emerson	11944
ESA	11944
Magnavox	11944
Panasonic	11946, 11947
RCA	11953
Sharp	11917
Sylvania	11944
Symphonic	11944
Toshiba	11945

VCR-controlled TV / VCR / DVD:

Sharp	20807

Audio Amplifiers:

Adcom	30577, 31100
Bose	30674
Carver	30892
Curtis Mathes	30300
Durabrand	31561
Elan	30647
GE	30078
Harman/Kardon	30892
JVC	30331
Left Coast	30892
Lenoxx	31561
Marantz	30892
McIntosh	30251
Modulaire	30395
NEC	30264

Optimus	30395, 30013, 30300, 30823
Parasound	30246
Philips	30892
Pioneer	30013, 30300, 30823
Polk Audio	30892
RadioShack	30395
RCA	30013, 30300, 30823
Realistic	30395, 30013
Shure	30264
Sony	30689, 30815
Soundesign	30078
Victor	30331
Wards	30078, 30013
Yamaha	30354, 30133

Audio Receivers:

ADC	30531
Adcom	30616
Aiwa	31405, 30189, 30121, 31388, 31641
Akai	30244, 31512
Alco	31390
AMC	31077
Amphion Media Wks	31563, 31615
AMW	31563, 31615
Anam	31609, 31074
Apex Digital	31257, 31430, 31774
Arcam	31189
Audiotronic	31189
Audiovox	31390, 31627
B & K	30701, 30702, 30820, 30840
BK	30702
Bose	31229, 30639, 31253, 31841, 31933
Brix	31602
Cairn	30189
Cambridge Soundwks	31370
Capetronic	30531
Carver	31189, 30189, 30121, 31289
Classic	31352
Coby	31389
Criterion	31420
Curtis Mathes	30014
Daewoo	31250
Delphi	31414
Denon	31360, 30121, 30771, 31142, 31306
Emerson	30531
Fisher	31801
Garrard	30463
Gateway	31517
Go Video	31532
Grundig	30189
Harman/Kardon	30110, 30189, 30891, 31289, 31304, 31306
Hitachi	31273, 31801
Initial	31426
Inkel	30491
Insignia	31030
Integra	30135, 30842, 31298, 31320
JBL	30110, 31306
JVC	31058, 30074, 31374, 31495, 31811
Kawasaki	31390
Kenwood	31313, 31570, 31569, 30186
KLH	31390, 31412, 31428
Koss	31366, 31497
Lasonic	31798
Lenoxx	31437
Lexicon	31076
LG	31293
Linn	30189
Liquid Video	31497
Magnavox	31189, 31269, 30189, 30391, 30531, 31266, 31514
Marantz	31189, 31269, 30189, 30891, 31289
McIntosh	31289
Micromega	31189, 30189
Mitsubishi	31393
Myryad	31189
Nakamichi	31313, 30097
New Castle	30502
Norcent	31389
Nova	31389

Onkyo	30135, 30380, 30842, 31298, 31320, 31531
Optimus	31023, 30074, 30014, 30121, 30186, 30502, 30531, 30670, 31074
Oritron	31366, 31497
Outlaw	30391
Panasonic	31308, 31518, 30309, 30367, 31288, 31316, 31548, 31633, 31763, 31764
Philips	31189, 31269, 30189, 30391, 30891, 31266
Pioneer	31023, 30014, 30150, 30244, 30531, 30630, 31384
Polaroid	31508
Polk Audio	30189, 31289, 31414
Proscan	31254
Radio Shack	31609
RCA	31023, 31609, 31254, 30531, 31074, 31390, 31511
Realistic	31609, 30121, 30186
Regent	31437
Revox	30189
Rio	31869
Saba	31519
Samsung	31295, 31304, 31500
Sansui	31189, 30189, 31764
Sanyo	31251, 31469, 31801
Sharp	30186, 30771, 31286
Sharper Image	31556
Sherwood	30491, 30502, 31077, 31423, 31517, 31653
Shinsonic	31426
Sirius	31602, 31627, 31811, 31987
Sonic Blue	31532, 31869
Sony	31058, 31441, 31258, 31759, 31622, 30168, 30474, 31406, 31558, 31658, 31758, 31858
Soundesign	30670
Stereophonics	31023
Sunfire	31313
Teac	30463, 31074, 31390, 31528
Technics	31308, 31518, 30309, 31384, 31633
Thorens	31189
Toshiba	30135, 30842, 31788
Venturer	31390
Victor	30074
Waitec	31352
Wards	30189, 30014
XM	31406, 31414
Yamaha	31023, 30176, 30186, 31176, 31276, 31331, 31375, 31476
Zenith	30857, 31293

Audio Accessories:

Accurian	31106
Altec Lansing	31056, 31485
Apple	31115, 31644
Cambridge Soundwks	31530
Creative	30872
D-Link	31522
Imerge	31491
Integra	31789
iPort	31917
Marantz	31491
Motorola	31464
NaviPod	31644
Netgear	31785
Omnifi	31605
Onkyo	31789
Roku	31828
Russound	32019
Slim Devices	31844
Sonance	31917
SSI	31522
Yamaha	31809, 31810

Video Accessories:

ABS	01272
Accurian	01653
Alienware	01272
Allegro	00160
Archer	00160

Bantor	00160
Centronic	00160
CyberPower	01272
D-Link	01554, 01731
Epson	01563
Gateway	01272
GC Electronics	00160
Hauppauge	01757
Hewlett Packard	01272, 01267
Howard Computers	01272
HP	01272, 01267
Hush	01272
iBUYPOWER	01272
Jebsee	00160
JVC	01384
Keyspan	01344
Leadtek	01614
LG	01415
Linksys	01272, 01365
Macro Image Tech	01383
Media Center PC	01272
Microsoft	01272
Mind	01272
Motorola	01363
MyHD	01383
Niveus Media	01272
Northgate	01272
Panasonic	01120
Pinnacle Systems	01268
Pioneer	01010
Princeton	00113, 00295
Radio Shack	00160
Ricavision	01272
Roku	01486
Samsung	01190, 01490
Sensory Science	01126
Sharp	01010
Sony	01272, 01324, 01364
Stack 9	01272
Sylvania	01563
Systemax	01272
Tagar Systems	01272
Toshiba	01272
Touch	01272
Verator	00113
Viewsonic	01272, 01329
Vizio	01126
Voodoo	01272
ZT Group	01272

Home Automation:

Accutek	31215
Amana	31716
Bionaire	30846, 31215
Frigidaire	31333
GE	30240
GoldStar	31537
Holmes	31215
Kenmore	31537
Lasko	30846
LG	31537
Lightolier	30184
Lutron	30597, 30318, 31239, 31597
Marmitek	30167
One For All	30167
PCS	30184
Radio Shack	30240
Royal Sovereign	31651
Security System	30167
Sharper Image	30846
SmartLinc	30184
Universal	30167
Universal X10	30167
Whirlpool	31332
Windmere	31215
X10	30167

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SPECIFICATIONS

ANALOG VIDEO SWITCHING

Bandwidth from input jack to output jack (bypass mode for component video)
Composite & S-Video. . . . . 70 MHz
Component: Y . . . . 110 MHz
Pr. . . . . 90 MHz
Pb . . . . 80 MHz

All analog video inputs and outputs are 75 Ω, 1.5 Vp-p.

ANALOG AUDIO

Input Impedance . . . . 20 kΩ

Output Impedance
Main . . . . 300 Ω (RCA), 600 Ω (XLR)
Zone2/3 & Record . . . . 51 Ω

Rated Input. . . . . 2.0 Vrms

Maximum Input. . . . . 5.3 Vrms

Minimum Load . . . . 5 kΩ

Rated Output (100 kΩ load). . . . . 2.0 Vrms

Maximum Output
RCA . . . . 6.3 Vrms
XLR . . . . 12.6 Vrms

Headphone Output. . . . . 100 mW into 32 Ω at 0.2% THD+N

Volume Control Range
Main . . . . -95.5 to +31.5 dB in 0.5 dB increments
Zone2/3 and Headphone . . . . -62.5 to +10.0 dB in 1.25 dB increments

Crosstalk (at 1 kHz) . . . . 82 dB between channels, 86 dB between inputs

XLR Pin Configuration . . . . Pin 1: Ground, Pin 2: Positive, Pin 3: Negative

DIGITAL AUDIO

Crossover
High-Pass Slope (Small Speaker Setting). . . . . 12 dB/octave (2nd order)
Low-Pass Slope (Subwoofer). . . . . 24 dB/octave (4th order)
Frequency (Adjustable). . . . . 25 to 160 Hz in 5 Hz increments

Tone Control
Filter Type. . . . . Shelf
Range. . . . . ±12 dB
Bass Turnover Frequency. . . . . 200 Hz
Treble Turnover Frequency. . . . . 2 kHz

Analog to Digital Conversion S/N Ratio at digital Rec output (IEC-A filter). . . . . 100 dB

All digital inputs and outputs comply with HDMI, S/PDIF, or AES/EBU standards. Sample rate converter output is 24-bit / 192 kHz regardless of input.

MAIN Path (RCA & XLR output)

Frequency Response and **Bandwidth**
Analog-Direct Inputs . . . . 10 Hz to 20 kHz (+0, -0.2 dB), 1 Hz to 130 kHz (+0, -3 dB)
Analog-DSP Inputs at 24/96 . . . . 10 Hz to 20 kHz (+0, -0.3 dB), 2 Hz to 44 kHz (+0, -3 dB)
Digital Inputs at 24/96 . . . . 10 Hz to 20 kHz (+0, -0.2 dB), 1 Hz to 45 kHz (+0, -3 dB)

THD+N (at Rated Input & Output)
Analog-Direct Inputs . . . . 0.006% (80 kHz BW)
Analog-DSP Inputs at 24/48 or 24/96 . . . . 0.004% (AES17 filter)
Digital Inputs at 24/48 or 24/96 . . . . 0.004% (AES17 filter)

IMD (CCIF at 15 kHz & 16 kHz)
Analog-Direct Inputs . . . . <0.001%
Analog-DSP Inputs at 24/48 . . . . 0.001%
Digital Inputs at 24/48 or 24/96 . . . . 0.001%

S/N Ratio (ref. 2.0 Vrms, IEC-A filter)
Analog-Direct Inputs . . . . 107 dB
Analog-DSP Inputs at 24/48 or 24/96 . . . . 101 dB
Digital Inputs at 24/48 or 24/96 . . . . 104 dB

ZONE2 and **ZONE3** Paths

Frequency Response and **Bandwidth** . . . . 20 Hz to 20 kHz (+0, -0.1 dB), 3 Hz to 140 kHz (+0, -3 dB)

THD+N (at Rated Input & Output) . . . . 0.06% (80 kHz BW)

IMD (CCIF at 15 kHz & 16 kHz) 0.06%

S/N Ratio (ref. 2.0 Vrms, IEC-A filter) . . . . 97 dB

FM TUNER

Sensitivity
50 dB S/N . . . . 13 dBµ typ., 25 dBµ max.
IHF . . . . 10 dBµ typ., 20 dBµ max.

S/N Ratio
Mono . . . . 75 dB typ., 65 dB min.
Stereo . . . . 69 dB typ., 60 dB min.

Distortion
Mono . . . . 0.2% typ., 1.0% max.
Stereo . . . . 0.3% typ., 1.5% max.

Stereo Separation . . . . 40 dB typ., 25 dB min.

Alternate Channel Selectivity (±400 kHz) . . . . 70 dB typ., 60 dB min.

Frequency Response . . . . 25 Hz to 15 kHz (+0, -2 dB)

AM TUNER

Sensitivity (20 dB S/N) . . . . 49 dBµ typ., 56 dBµ max.

S/N Ratio . . . . 50 dB typ., 43 dB min.

Distortion . . . . 0.7% typ., 2.0% max.

One Signal Selectivity (±10 kHz) . . . . 24 dB typ., 18 dB min.

CONTROL

Infra Red
Carrier Frequency. . . . . 38 kHz
Max. 12V Supply Current. . . . . 150 mA
Max. Emitter Current . . . . 60 mA per output

RS-232 Interface
Connection . . . . DB-9F, straight-wired
Pinout (Statement D2v side) . . . . Pin 2: Tx, Pin 3: Rx, Pin 5: Ground
Baud rate 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Configuration. . . . . 8 data bits, 1 stop bit, no parity bits, flow control (None, RTS/CTS)

Trigger Outputs
Polarity . . . . tip positive, sleeve ground
Max. Current at 12 VDC . . . . Triggers 1 and 2: 50 mA each, Trigger 3: 200 mA
Sequential Delay . . . . 250 ms

POWER REQUIREMENT

Consumption . . . . Maximum 170 W

Low voltage version: In countries where the line voltage is 120V, this product operates from a single phase AC power source that supplies between 108V and 132V at a frequency of 60 Hz.

High voltage version: In countries where the line voltage is 220, 230, or 240V, this product operates from a single phase AC power source that supplies between 216V and 264V at a frequency of 50 or 60 Hz.

DIMENSIONS

Height . . . . 5 $^7/_8$ in. (14.9 cm) including feet, rackmounting – 3 rack units without feet

Width Standard Version . . . . 19 $^1/_4$ in. (49 cm)
Rackmount Version . . . . 19 in. (48.3 cm)
No-Handle Version . . . . 17 $^1/_4$ in. (43.8 cm)

Depth . . . . 15 $^1/_4$ in. (38.7 cm)

Weight (unpacked, not including 8 lb (3.5 kg) ARC-1 microphone kit). . . . . 27 lb (12.3 kg)

LIMITED **WARRANTY**

CANADA & USA

The warranty period on Anthem products is five (5) years for power amplifiers and integrated amplifiers, three (3) years for audio preamplifiers and audio processing, two (2) years for video equipment and video processing, one (1) year for remote controls, and six (6) months for projector lamps from date of purchase from Anthem or an Authorized Anthem Dealer. If Anthem determines that the product has a defect in materials or manufacturing during the period Anthem will at its option repair, replace or provide the necessary replacement parts without charging for parts or labor. Repaired or replaced equipment or parts supplied under this warranty are covered by the unexpired portion of the warranty.

This warranty is transferable only if the re-sold product is purchased from an Authorized Anthem Dealer. Display products sold by an Authorized Anthem Dealer are covered by the same warranty except that the period commences on the date of the dealer invoice, not the purchaser's invoice, and cosmetic flaws are excluded.

Warranty is void if the serial number has been removed, altered or defaced, if the product has been operated, installed or handled other than in accordance with the intended application, tampered with, modified, or damaged by accident, while in transport or by failure of electric power, or has been repaired by a non-authorized party. Anthem shall have no obligation to correct any defect that is not reproducible by Anthem. If inspection by Anthem discloses that the repair required is not covered by this warranty, regular repair charges shall apply.

If a problem is discovered in your Anthem product, please contact the Authorized Anthem Dealer from whom you purchased the product. Your dealer will help to determine the cause of the problem and arrange for the appropriate action. Alternatively, follow the procedure below for factory service.

A Return Authorization (RA) number must be obtained from Anthem Technical Support before a product can be shipped to Anthem for any reason. Product shipped to Anthem without its RA Number clearly visible on the outside of the shipping carton will be refused and returned to the sender, freight collect. Product shipped to Anthem must have shipping and insurance prepaid by the sender, be packaged in the original carton and packing material and accompanied by a written description of the defect. Service will not be given under warranty without an accompanying copy of the sales invoice. Product repaired under warranty will be returned with shipping and insurance prepaid by Anthem (within Canada and continental USA only).

Disclaimer of Liability

Under no circumstances shall Anthem, its agents, representatives or employees assume liability or responsibility for injury or damages sustained in the use or operation of Anthem products or for damages to connected products. Some jurisdictions do not allow limitations of incidental or consequential damages so this exclusion may not apply to you.

Anthem reserves the right to make design changes without obligation to revise prior versions. All specifications are subject to change without notice.

This warranty shall be the sole and exclusive remedy to you. No other warranty or condition, statutory or otherwise, expressed or implied, shall be imposed upon Anthem nor shall any representation made by any person, including a representative or agent of Anthem, be effective to extend the warranty coverage provided herein.

On the expiration of the warranty all liability of Anthem in connection with the product shall terminate.


INTERNATIONAL

Terms and conditions are set and maintained by the Authorized Anthem Distributor, not Anthem.

THE BIG PICTURE FRONT PANEL

ANTHEM STATEMENT **D2**v

24/192 HIGH PRECISION **UPSAMPLER**
PCM | Dolby Digital | DTS

○ DOLBY TRUE**HD**
○ DOLBY DIGITAL
○ DTS
○ THX
○ STEREO

ANTHEM-HD
BROADCAST QUALITY SCALER

HƏMI

VXP
BY GENNUM

**DOLBY
TRUE**HD

**DOLBY
VOLUME**

dts-HD
Master Audio

THX
ULTRA2
SUBWOOFER

ANTHEM LOGIC
MUSIC CINEMA

FRONTS • 🎧

CENTER

SURR • REARS

SUB • LFE

PATH

MAIN   ZONE 2   ZONE 3   RECORD

2-Ch BAL   6-Ch S/E   TAPE   FM • AM

(Back)   1   2   3   4   5   6   (Navigate) ▶
(Select) ▲
▼
ST • HiB • M   SEEK ▶   TUNE

SOURCE
DVD   TV   SAT   VCR   AUX

🎧

MODE   DYNAMICS   THX   DISPLAY   BASS   TREBLE   BYPASS   BALANCE   STATUS   MUTE

SURROUND   TONE

(Setup)

MAIN   ZONE 2   ZONE 3
POWER

THE BIG PICTURE REAR PANEL

ANTHEM®

THE KEY TO HIGH END AUDIO-VIDEO™